



Minnesota River Greenway

MASTER PLAN

ADOPTED BY THE DAKOTA COUNTY BOARD OF COMMISSIONERS OCTOBER 18, 2011
APPROVED BY THE METROPOLITAN COUNCIL JANUARY 25, 2012

Dakota
COUNTY



Minnesota River Greenway

MASTER PLAN

Acknowledgements



Dakota County Board of Commissioners:

- District 1 - Joseph A. Harris
- District 2 - Kathleen A. Gaylord
- District 3 - Thomas A. Egan
- District 4 - Nancy Schouweiler
- District 5 - Liz Workman
- District 6 - Paul J. Krause
- District 7 - Willis E. Branning

Project manager:

John Mertens, Senior Planner, Dakota County
Office of Planning & Analysis

Master plan consultants:



Hoisington Koegler Group, Inc.



Barr Engineering



Bolton & Menk



The 106 Group

Funded in part by:



BlueCross BlueShield
of Minnesota

Technical advisory group:

- Jennifer Bruestle, City of Mendota
- City of Lilydale
- Kris Jenson, Dakota County Public Health
- Jan Wolff, MNDNR
- Joel Stedman, MNDNR
- Jeanne Holler, USFWS
- Terry Schwalbe, Lower Minnesota River Watershed
- Jeffrey Radick, City of Burnsville
- Terry Schultz, City of Burnsville
- Jake Sedlacek, City of Mendota Heights
- Ryan Ruzek, City of Mendota Heights
- Mike Albers, City of Mendota Heights
- Juli Johnson, City of Eagan
- Mike Ridley, City of Eagan
- Tim Plath, City of Eagan
- Lori Nelson, Friends of Minnesota Valley
- Chad Roberts, Dakota County Historical Society
- Ted Bores, MN Historical Society
- Bruce Blair, Dakota County
- Kurt Chatfield, Dakota County
- Beth Landahl, Dakota County
- Dan Patterson, Dakota County
- Steve Sullivan, Dakota County
- Terry Vikla, Dakota County



Contents

Chapter 1: INTRODUCTION	7
<i>Overview</i>	7
<i>Planning context and master planning</i>	10
<i>Recreation needs</i>	12
Chapter 2: EXISTING CONDITIONS	15
a. Overview	15
b. Existing cultural resources	18
c. Existing natural resources	20
Chapter 3: THE PLAN	23
a. Overview	23
b. Development plan	24
c. Key initiatives	31
d. Interpretive plan	43
e. Stewardship plan	47
Chapter 4: IMPLEMENTATION & MANAGEMENT PLAN	53
Appendix: PLANNING CONTEXT STUDIES	

Figures & tables



FIGURES (Figure number is also page number)

- 14. Core and primary service areas
- 18. Cultural resources
- 21. Existing land cover and ecological quality
- 24. Typical trail corridor section
- 25. Minnesota River Greenway concept map
- 29. Grade-separated road and railroad crossings
- 29a. Typical railroad underpass
- 30. Lighting map
- 31. Minnesota River Greenway trail alignment segments
- 33. Minnesota River Greenway Segment 1 concept
- 34. Lilydale neighborhood gateway and connection to Lilydale Regional Park
- 35. Downtown Mendota trailhead and connections
- 37. Minnesota River Greenway Segment 2 concept
- 38. Cedar Avenue boat launch and trailhead
- 39. Quarry lake trail alignment
- 40. Minnesota River Greenway Segment 3 concept
- 41. Minnesota River Greenway Segment 4 concept
- 48. Habitat investment areas
- 55. Minnesota River Greenway priority projects
- 56. Minnesota River Greenway property ownership

TABLES (Table number is also page number)

- 12. Population projections for cities adjacent the Minnesota River
- 19. Cultural resources
- 47. Habitat investment strategies
- 54. Minnesota River Greenway priority projects
- 55. Land protection costs
- 56. Protection and stewardship lands
- 57. Land protection and stewardship tools
- 58. Greenway implementation agency roles
- 59. Pavement management activities
- 62. Minnesota River Greenway capital development cost estimate
- 64. Greenway operations and maintenance costs
- 65. Major natural resource projects

Introduction

1



OVERVIEW

For generations and across cultures, the Minnesota River has acted as a vital link, a place of settlement and a powerful natural landmark. This master plan conveys a vision to establish a greenway following the south side of the river valley from Burnsville to St. Paul. Like other greenways being planned in Dakota County, the Minnesota River Greenway is envisioned to provide multiple benefits to water quality, habitat enhancement, recreation and nonmotorized transportation.

The Minnesota River Greenway travels 17 miles through Burnsville, Eagan, Mendota Heights, Mendota and Lilydale before landing at St. Paul's Lilydale Regional Park, where trails continue to Harriet Island and downtown St. Paul. The corridor is rich in cultural and natural resources and offers a singular opportunity as a connective ribbon of nature and trails along the Minnesota River. This corridor is part of the larger Minnesota Valley State Trail planned by the Minnesota Department of Natural Resources that will travel from Le Sueur to St. Paul.



The Minnesota River Greenway is in red.

As the first greenway master plan to be prepared since Dakota County solidified its greenway vision in the 2008 Park System Plan, the Minnesota River Greenway, along with the North Creek Greenway, represents an important milestone in the creation of Dakota County's greenway network. As such, this master plan has been prepared as a model in both approach and design signature for greenway master plans to follow.

The purpose of this master plan is to:

- ▶ Express an integrated vision for recreation, nonmotorized transportation, habitat and water quality
- ▶ Determine regional trail alignment and design
- ▶ Provide strategies for interpretation, resource stewardship, development, land acquisition and operations
- ▶ Estimate project costs
- ▶ Satisfy requirements for Metropolitan Council regional destination trail and greenway planning

Dakota County Greenway Vision

With the 2008 Park System Plan and 2010 Greenway Guidebook, Dakota County has established a progressive vision for an interconnected system of open space corridors — greenways. We need only look as far as Minneapolis' Grand Rounds to realize the powerful legacy of community benefits greenways can bestow.

Dakota County Park System Plan

The 2008 Dakota County Park System Plan established the foundation for a countywide greenway network by envisioning a system of regional greenways that interconnect parks, schools, local trails and libraries through the nonrural portions of the county. Dakota County's greenway vision suggests 200 miles of regional greenways, 2/3 of which is on land currently in public or semipublic ownership. A key plan priority is to implement more than 50 miles of greenways by 2020, including the 17 miles of the Minnesota River Greenway.

Dakota County Greenway Collaborative: the Greenway Guidebook

In 2010, Dakota County adopted the Dakota County Greenway Guidebook as a framework for greenway development. The guidebook establishes a framework for a collaborative approach to governance, stewardship, design and operation of greenways.



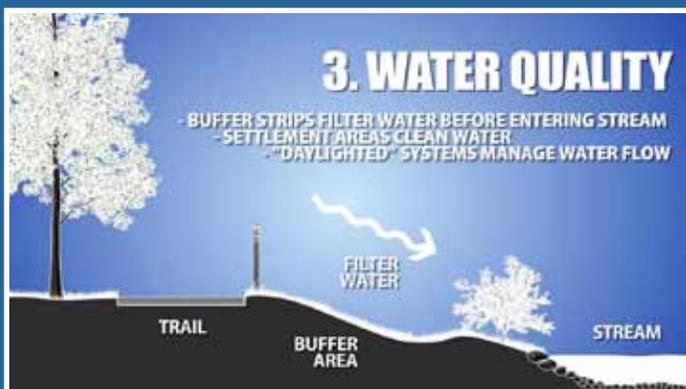
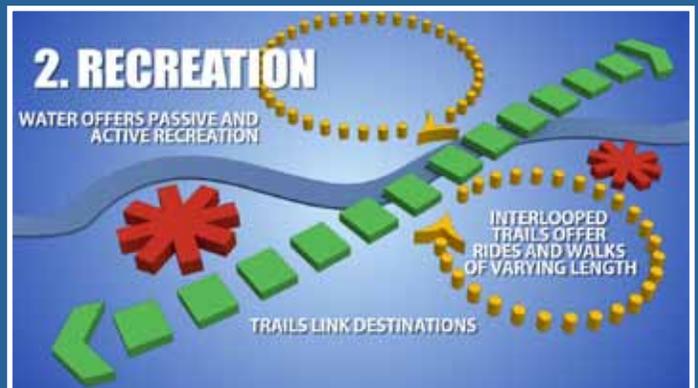
The Dakota County Greenways Vision includes the Minnesota River Greenway as a first priority greenway.



PLANNING CONTEXT

The Minnesota River Greenway will travel 17-mile through five municipalities, Fort Snelling State Park and the Minnesota Valley National Wildlife Refuge. This greenway is part of the Minnesota Valley State Trail being planned by the MnDNR and could be designated as a state trail. Other facilities and planning efforts impacting the greenway corridor include (see Appendix for more detail):

- ▶ Metropolitan Regional Parks System Plan
- ▶ Local comprehensive plans
- ▶ Intercity Trail
- ▶ Long Meadow Lake / Old Cedar Avenue bridge
- ▶ Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail Comprehensive Plan, July 1984
- ▶ Fort Snelling State Park Management Plan, 1997
- ▶ Minnesota Valley National Wildlife Refuge / Black Dog Road Area
- ▶ 2010 Lilydale Regional Park Master Plan
- ▶ 2007 Pilot Knob Phase II Natural Resource Management Plan
- ▶ 2008 Dakota County Park System Plan
- ▶ 2010 Dakota County Greenway Guidebook
- ▶ Mn/DOT Highway 13 in Mendota
- ▶ Mn/DOT Highway 13 and County Road 5 interchange
- ▶ City of Burnsville, Minnesota River Quadrant concept



Dakota County's greenway concept expands the notion of corridor to integrate habitat, recreation, water quality and transportation to create a countywide green infrastructure network.



GREENWAY MASTER PLANNING

The yearlong master planning process was led by Dakota County under advisement from a Technical Advisory Group. The TAG met during each phase to provide guidance, provide insight into technical questions, explore options, identify partnership opportunities and discuss concurrent projects. The TAG also institutionalized a collaborative process and established relationships across agencies with a stake in implementing the master plan. Five TAG meetings were held, on July 14, 2010, Oct. 13, 2010, Nov. 17 2010, March 3, 2011, and May 4, 2011.

A cultural resources and interpretation workshop on Sept. 29, 2010, created preliminary interpretive themes. Meetings also were held with Xcel Energy, DNR/Fort Snelling State Park staff, City of St. Paul, City of Mendota, City of Eagan Public Safety and Metropolitan Council's Environmental Services.

December 16, 2010, open house

The first open house gathered input on the greenway trail alignment, interpretive themes and approach to natural resource and water quality improvement. Staff notified all landowners within 1/4 mile of the Minnesota River and North Creek greenways (about 1,100 people) with a brochure outlining the project and an invitation to the open house. About 30 people attended.

Overall reaction to the greenway was positive. Attendees did raise concerns about the difficulty of managing contaminated sites. Written comments included: concerns about contamination and former dump sites in the river valley; need for local connections across Highway 13 and the railroad corridor; and the value of the river valley as a recreation resource; frequency of flooding along the river.

July 20, 2011, open house

Again all landowners within ¼ mile of the greenways (about 1,100 people) were mailed a brochure outlining the project and an invitation to the open house.

Seventeen attendees signed in and commented on issues ranging from the Nicols Fen alignment, cost estimates and history. There is interest in protecting Nicols Fen as well as remaining historic sites, particularly in the Black Dog Spring and Black Dog Road area. Other attendees expressed enthusiasm for the greenways along with skepticism that the County could acquire enough money to complete them.

Project website

A project website was established at www.hkgi.com/projects/dakota. An interactive greenway map and a virtual open house with an opportunity for feedback gave the general public easy access to follow and contribute to the project.

Technical advisory group

A technical advisory group met regularly during the planning process. The group was made up of representatives from:

- ▶ City of Lilydale
- ▶ City of Mendota
- ▶ City of Mendota Heights
- ▶ City of Eagan
- ▶ City of Burnsville
- ▶ U.S. Fish and Wildlife Service
- ▶ Minnesota Department of Natural Resources
- ▶ Lower Minnesota River Watershed District
- ▶ Fort Snelling State Park
- ▶ Minnesota Historical Society
- ▶ Dakota County Historical Society
- ▶ Dakota County Department of Public Health
- ▶ Dakota County Parks and Open Space Department
- ▶ Dakota County Office of Planning and Analysis



Stakeholders identified current visitors to Dakota County parks:

- ▶ Wildlife/bird watchers
- ▶ School groups
- ▶ Seniors
- ▶ Nonmotorized commuters
- ▶ Hikers, walkers, runners, cyclists
- ▶ Anglers
- ▶ People using parks for athletics and community events/activities
- ▶ Residents
- ▶ Families
- ▶ People who have disabilities
- ▶ Bicycle racers
- ▶ Foragers (fruit, flowers)
- ▶ Boaters
- ▶ Graffiti artists
- ▶ People who are homeless

Stakeholders also identified groups of visitors they would like to see as greenway users in the future:

- ▶ Groups who would benefit from increased physical activity (youth, middle-aged women and people at risk of obesity and related disorders)
- ▶ Corporate users
- ▶ Commercial and business connections
- ▶ Artists

Public review

The Public Review Draft Master Plan was on Dakota County's website and the greenway website from July 21 through August for public review. The Public Review Draft was also available to all project stakeholders: Cities of Lilydale, Mendota, Mendota Heights, Burnsville, and Eagan, the Department of Natural Resources / Fort Snelling State Park, the U.S. Fish and Wildlife Service, the Lower Minnesota River Watershed District, the Minnesota Historical Society, the Dakota County Historical Society, and the Metropolitan Council. In addition, a summary presentation was prepared for Technical Advisory Committee Members to present to their organizations. Dakota County Staff presented the Draft Plan to the City of Burnsville City Council work session with the Park and Natural Resource Commission on September 13, 2011. Comments included the following:

Which agency is responsible for maintaining the trail through Burnsville?

Answer: As a regional facility Dakota County would be the primary agency responsible for operating and maintaining the trail. The Black Dog Lake section of the greenway is within the Minnesota Valley National Wildlife Refuge, thus there is potential to share in the costs of maintenance and operations.

Will the trail be plowed in the winter? **Answer:** Generally regional trails will be plowed for winter use when it is feasible and where there is demand for winter use.

Is the frequent flooding a concern? **Answer:** Yes, flooding will impact the trail in the Black Dog Lake area. The trail will be closed during flood events and will likely require a higher maintenance costs. Trail will be designed /constructed to better withstand frequent flooding.

Metropolitan Council staff also recommended several changes to the draft plan:

A request for grade-separated crossing of Comanche Road adjacent the Seneca Wastewater Treatment Facility. **Response:** This plan now includes a grade-separated crossing of Comanche Road in figures, text and estimates.

Acknowledgement in the plan that Dakota County will discuss the trail alignment, alternatives and final designs with the Metropolitan Council's Environmental Services unit to protect regional interceptor facilities and to accommodate future treatment plant expansion. **Response:** The county will continue to discuss these issues and others that arise with Environmental Services to ensure compatibility.

Clarification as to what the name of the regional trail will be. **Response:** The regional trail within Dakota County's portion of the Minnesota River Greenway will remain named Big Rivers Regional Trail. This could change



in future processes as the regional trail and greenway systems grow and evolve, but the county does not anticipate a name change in the next decade. Wayfinding and signage will refer to the trail as the Big Rivers Regional Trail and, where pertinent, refer to the larger context as the Minnesota River Greenway.

Description of coordination with the City of St. Paul. **Response:** Dakota County and the City of St. Paul jointly submitted a 2011 federal SAFETEA-LU application to address the Lilydale gap in the regional trail system. Drafts of this plan were shared with St. Paul as part of this application process. The County and City will continue to coordinate to address this gap. The City of St. Paul was not a part of the Technical Advisory Group because the regional trail connection already exists in St. Paul and Lilydale Regional Park. The gap between Big Rivers Regional Trail is solely within Dakota County and has a clearly identified alignment (and is only 800 feet).

Description of coordination with the cities of Burnsville, Eagan, Mendota Heights, Mendota and Lilydale. **Response:** Each city participated in the plan’s technical advisory group (listed on Page 3). County staff shared alignment options and other plan elements in individual meetings with city staff and, in some cases, elected officials. Dakota County did not request letters of support or resolutions because the project is consistent with each city’s comprehensive plan.

Table 12. Population projections adjacent to the Minnesota River Greenway. (Source: Metropolitan Council Community Profiles)

MUNICIPALITY	2009 ESTIMATE	2030 PROJ.	% CHANGE
Apple Valley	49,376	71,200	44%
St. Paul	287,501	331,000	15%
Savage	27,567	39,200	42%
West St. Paul	18,947	21,700	15%
Sunfish Lake	548	530	-3%
Richfield	33,859	45,000	33%
Lilydale	783	1,100	40%
Mendota Heights	11,766	11,800	0.3%
Mendota	196	270	38%
Eagan	65,933	70,800	7%
Burnsville	61,042	65,000	7%
Minneapolis	386,691	441,100	14%
Bloomington	84,701	92,500	9%
Total	1,028,910	1,191,200	16%

RECREATION NEEDS

Natural areas, trails and cultural resources define communities and often are cited by residents as their favorite places. Respondents to Dakota County’s 2006 park survey cited paved trails, loop trails, nature education programs, natural area visits, bird watching, environmental stewardship programs and cultural and history programs among the top 25 activities they want in the county’s park system. Recreation and demographic trends suggest these needs will continue well into the future.

In addition to fulfilling recreation needs in Dakota County, the area encompassing the Minnesota River Greenway has been identified as an important part of the state and regional recreation systems. The Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail Comprehensive Plan has identified a need for a state trail and management of natural resources in the Minnesota River Valley from Le Sueur to St. Paul. Regionally, the Metropolitan Council’s 2030 Regional Parks Policy Plan identifies the need for a regional trail along the Minnesota River through Dakota County to the Scott County boundary as a priority.

Visitors

A broadly generalized profile of greenway visitors was created based on input from existing visitors to Dakota County parks and trails, from stakeholders and from demographics of the population within 30 miles of Dakota County.



The following observations can be made about potential visitors based on census data from 1990, 2000 and 2010.

- ▶ The people served by Dakota County parks and trails (those in a 30-mile radius around the parks) are becoming increasingly diverse. As recreation, interpretation and education are developed, outreach should be considered.
- ▶ There are more than half a million children enrolled in schools in the area served by Dakota County parks; more than one quarter of the population is younger than 17. Children and families are a large group of potential greenway users.
- ▶ Less than 10 percent of the population in the area served by Dakota County is over the age of 65, but this age group is projected to increase dramatically in number and proportion in the next 20 years. This influx of baby boomers into this age category will influence interpretive and education program development.
- ▶ Based on the 2000 census, the per capita income for the U.S. was \$21,587. The per capita income for the area served by Dakota County parks was more 20 percent higher, at \$26,273. Higher incomes have historically been associated with greater participation in recreation activities.

Trends

Popularity of trail-based activities, active living, interest in nature, transportation and connectivity, engaged aging, interest in history and culture and population growth all point toward increasing interest in and visits to Dakota County trails.

Trail use

Trails are the No. 1 desired recreation facility in poll after poll. People of all ages and abilities can enjoy them, they are inexpensive for users and often are close to home. The Minnesota Statewide Comprehensive Outdoor Recreation Plan (SCORP) notes that the interest and demand for more trails are being felt at all levels of government. According to the 2008 Metropolitan Council Regional Parks and Trails Survey, at least two thirds of people using recreational facilities in the metro were using trails. Biking and walking are the most popular trail uses. Half of all metro park and trail users in 2008 were bicyclists or walkers. Running, inline skating and dogwalking also are popular.

Active living

In 2009, 64.3 percent of adults in Dakota County were either overweight or obese. If the current trend continues, the percentage is expected to be 76 percent by 2020. Nationally, the obesity rate in children has tripled over the past 30 years. Today about 20 percent of schoolage children are overweight or obese.

Regular moderate physical activity can help prevent a host of disorders, including heart disease, obesity, high blood pressure, Type 2 diabetes and osteoporosis. More physical activity at a population level can reduce health care costs and other costs to society.

Walking and biking are two of the simplest and most popular ways to integrate regular physical activity into daily routines, which is referred to as active living. Communities that have physical infrastructure such as trails and programs to promote walking and biking tend to have more physically active and healthier populations.

Interest in nature

Increased sensitivity to ecological issues and the benefits of healthy ecosystems has led to people seeking more natural experiences. There also is increased interest in and opportunities for environmental stewardship activities such as stream and



riparian restoration and the removal of invasive species. In addition, people desire more educational and interpretive programs and are seeking a better balance of environment and recreation.

Transportation and connectivity

Health benefits, concerns about climate change and rising energy costs have increased demand for trails and bikeways as preferable transportation options. Regional trails with grade-separated crossings offer cyclists the advantages that motorists enjoy on freeways. Connectivity to local trails is essential. The more connected the trail, the more use it will see. Connecting trails reduce the need for motor vehicle parking at trailheads. In 2008, half of all regional trail users arrived by bicycle or on foot (Metropolitan Council Regional Parks and Trails Survey 2008).

Engaged aging

Trail users tend to be older than park users. In 2008, 54 percent of Big Rivers Regional Trail users polled were between the ages of 45 and 64. Trail use likely will remain high as the baby boom generation ages and remains physically active — or gets more physical activity with increased leisure time — by walking, hiking or biking on trails.

Interest in history and culture

The ability to integrate cultural, historic and environmental interpretation into the greenway will add richness to the greenway experience and attract visitors which building a sense of place.

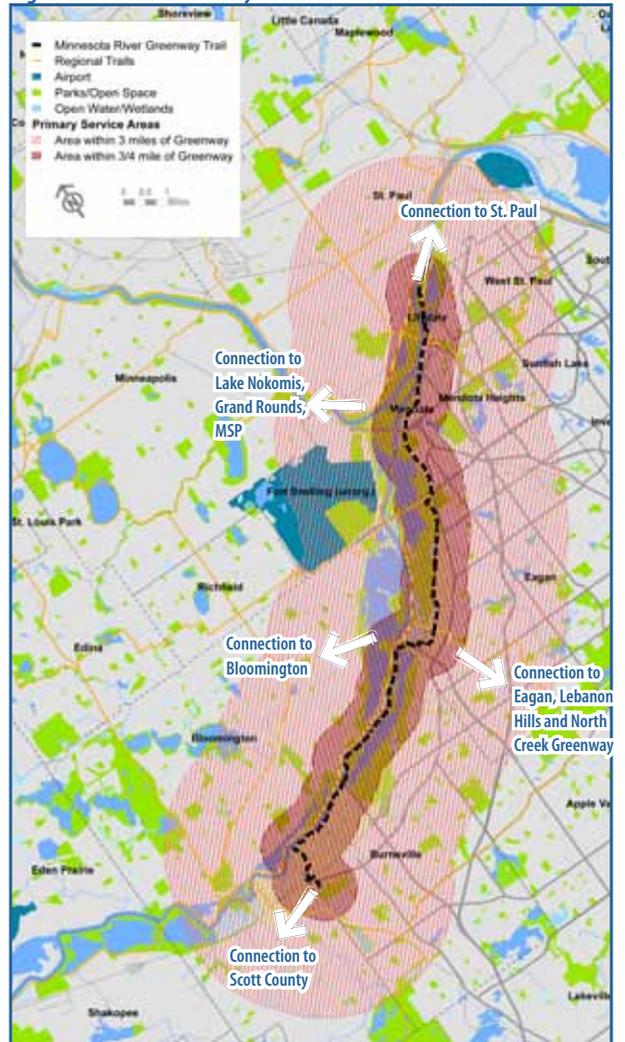
Population

Metropolitan Council studies indicate half of regional trail users live within 3/4 mile of the trail and 3/4 live within 3 miles. The 3/4 mile area is considered the core service area and the 3-mile area the primary service area. Communities that touch the Minnesota River Greenway's primary service area are some of the most densely populated in the metropolitan area. As shown in Table 12, most communities in the primary service area expect modest growth over the next 20 years.

Use forecasts

The Metropolitan Council's 2009 visit estimate for the existing portion of the Minnesota River Greenway, the 4.5-mile Big Rivers Regional Trail, was 142,000. Based on the current use patterns, if the entire regional trail identified in the greenway were open today, there would be 539,000 visits per year. The 2030 population of the communities touching the greenway's 3-mile service area is expected to increase by 16 percent. Assuming use rates are stable (a very conservative assumption), in 2030, greenway visitation can be expected to surpass 625,000 annual visits. This estimate does not take into account increased use based on current recreation trends and increased use spurred by better future connectivity to the larger greenway system and other state, regional and local trails.

Figure 14. Core and Primary Service Areas



Existing conditions

2



a. Overview

The Minnesota River Greenway travels from Lilydale Regional Park in St. Paul upriver through the communities of Lilydale, Mendota, Mendota Heights, Eagan and Burnsville. The greenway corridor links destinations including Lilydale Regional Park, the North Urban Regional Trail, the Big Rivers Regional Trail, historic Mendota, Fort Snelling State Park, the Minnesota Valley National Wildlife Refuge and Burnsville's Minnesota River Quadrant, which will become a mixed-use complex for housing, employment, retail and recreation.

The Minnesota River Valley has for centuries attracted human settlement. Burial mounds and earthworks along the Minnesota River and its tributaries indicate an intensive occupation of the area prior to European contact. The area was settled by Europeans and used as fur trading posts, forts, farms, mills, breweries and residences. Settlement increased rapidly in the late 19th and early 20th century and continues to expand today.

Today the Minnesota River Greenway is a rich ribbon of floodplain, wetlands and river bluffs surrounded by development. The corridor provides wildlife habitat and is important for fish and bird species. The long history of settlement has also left severely degraded areas, including several contaminated dump sites.

Greenway character

Access to natural areas and views of the river valley result from the regional trail's location in one of the largest contiguous natural areas in the Twin Cities, the Minnesota River Greenway. The greenway has potential to provide a varied recreation experience alternating from the top of the river bluff to the bottomlands.

This chapter presents:

- ▶ Existing greenway corridor character
- ▶ History of the greenway area
- ▶ Existing cultural resources
- ▶ Existing natural resources



Railroad bridge at Mendota leading to Fort Snelling State Park trails

Segment 1: Lilydale Regional Park to I-494 (5 miles)

Dakota County's Minnesota River Greenway begins at the boundary of Lilydale Regional Park and follows the existing Big Rivers Regional Trail. With the exception of a trail gap between Lilydale Park and the Big Rivers Regional Trail, this section of the trail is complete. The existing trail is well-used and allows for midbluff views of the Minnesota River, including at its confluence with the Mississippi. The trail skirts downtown Mendota and continues southwest to the existing WPA overlook and I-494.



Segment 2: I-494 to Cedar Ave/TH77 (4 miles)

This segment includes the Dakota County side of Fort Snelling State Park. The land between Highway 13 and the park is in industrial uses with a railroad corridor dividing the developed and natural land uses. Between the railroad corridor and the Minnesota River is a highly sensitive wetland and fen complex. Challenges include difficulties of building on wetlands, seasonal flooding, high water table, sensitivity of the fens and a history of using areas of the river valley for dumping. There is a future regional greenway connection to Lebanon Hills Regional Park, which will serve as the primary hub of the county's greenway network.



Segment 3: Cedar Ave/TH77 to I-35W (3.5 miles)

This segment follows Black Dog Road, which is currently closed to automobile traffic. The road floods seasonally, as it is on a narrow augmented natural levee between the Minnesota River and Black Dog Lake. Most of the land in this stretch of the river valley is managed by the Minnesota Valley National Wildlife Refuge. The Xcel power plant is a major fixture in the river valley. At Cedar Avenue, future trail connections to trails in Hennepin County — including the Minneapolis Chain of Lakes — will be possible when a bridge across Long Meadow Lake is completed.



Decaying Long Meadow Lake bridge



Wildlife Refuge along Black Dog Road



Riding along Black Dog Road

Segment 4: I-35W to Scott County (4 miles)

Southeast of I-35W the greenway will continue to follow the Minnesota River to the Scott County boundary to connect with future regional trails in Scott County. This area is currently a gravel mine and landfill. The city of Burnsville plans to redevelop this area with a mix of commercial, industrial, housing and recreational uses. Recreational uses and features will include a quarry lake, a golf course on the current landfill site and a riverfront park.



Current gravel mine and landfill in Burnsville with the Minnesota River at top of photo and I-35W at right.



Redevelopment concept



TABLE 19. Previous cultural resources surveys conducted within the Minnesota River Greenway corridor

SURVEY YEAR	AUTHOR(S)	TITLE	REPORT LOCATED IN SHPO FILES
1964	L. Johnson	A Report on the Archeological Explorations on the Site of Cantonment New Hope (21DK24), Minnesota	No
1987	G. Lothson	An Archaeological and Recommendations Report for the Ice House-Carriage House Structure, Sibley House Historic Site Complex (21DK31), Mendota, Minnesota (Draft & Final)	No
1993	L. Peterson	Survey Report: History/Architecture, Minnesota Trunk Highway Archaeological Reconnaissance Survey (Mn/DOT SP1901, 1908, 1918)	No
1993	The 106 Group Ltd.	Archaeological Reconnaissance Survey, Bloomington Siphon Improvement, Bloomington, Hennepin County.	Yes
1993	Matthew L. Murray	Phase I Archaeological Reconnaissance at 93HE1 and 93HE2 in the city of Bloomington, Hennepin County, Minnesota	Yes
1994	Charlene Roise, S. Rounds, C. De Miranda and Christina Harrison	Intensive Level Cultural Resources Survey, Dakota County Airport Site 3, Archaeology and the Built Environment	No
1995	Science Applications International Corporation	Cultural Resources Survey Report, Minneapolis-St. Paul International Airport Air Reserve Station, Minneapolis, Minnesota	Yes
1996	R. Clouse	Interim Report on the Archaeological Excavations at the American Fur Company District Headquarters/Henry H. Sibley House (21DK31) Mendota, Minnesota	No
1999	Robert A. Clouse	Archaeological Investigations at the Hypolite DuPuis House, Mendota, Minnesota	Yes
2003	Frank Florin	Phase I Archaeological Survey for Proposed Water Control Structure: Minnesota River National Wildlife Refuge, Long Meadow Lake Unit	Yes
2005	Michael Justin	A Phase I Archaeological Investigation of the Metropolitan Airports Commission North Side Storm Sewer, Hennepin County, Minnesota	Yes
2006	LeRoy Gonsior	Minnesota State Park Cultural Resource Management Program. Cultural Resource Reconnaissance Survey for a Proposed Trail; Reroute Project, Brustle Farmstead Segment, Dakota County, Minnesota	Yes
2006	Timothy A. Tumberg	Archaeological Testing at Historic Fort Snelling (21-HE-99), Hennepin County, Minnesota	Yes



c. Existing natural resources

The Minnesota River Greenway is characterized by large expanses of high to moderate quality ecosystems within and adjacent the Minnesota River valley. The upstream end within the city of Burnsville is the most developed portion. The interspersed many plant communities increases the ecological value of the valley. Much of the land along the greenway is within the Minnesota Valley National Wildlife Refuge, Fort Snelling State Park, St. Paul regional parks or current and future city of Burnsville parks.

VEGETATIVE COVER

According to the Minnesota Land Cover Classification System and field verification during master planning, the Minnesota River Greenway vegetation cover is primarily wetlands — open water, shrub-carr and emergent wetlands the length of the river valley and the Fort Snelling and Nicols Meadow calcareous fens. The adjoining bluffs are composed of disturbed and fragmented prairies, savannas and woodlands. The upstream portion in Burnsville has remnant floodplain forests (Figure 21). Many areas in the valley have been identified by the MnDNR's Minnesota County Biological Survey as some of the highest quality habitat in the county. In addition, the valley is habitat for numerous state and federal endangered plant species.

WATER RESOURCES & FLOODING

The Minnesota River is the dominant water system of the greenway, providing periodic floods to the valley wetlands systems. While these floods can be key to wetland functions, the high sediment load of the Minnesota River can lead to sedimentation and filling of the floodplain wetlands. As land use in the watershed has changed and more stormwater arrives in the Minnesota River more rapidly, recent years have seen an increase in flood duration and frequency. Flooding and sediment loading will continue to have a significant impact on habitat and recreation in the Minnesota River Valley.

There are four trout streams in the greenway corridor in Eagan and Burnsville. These are shown in red on Figure 21.

ECOLOGICAL QUALITY

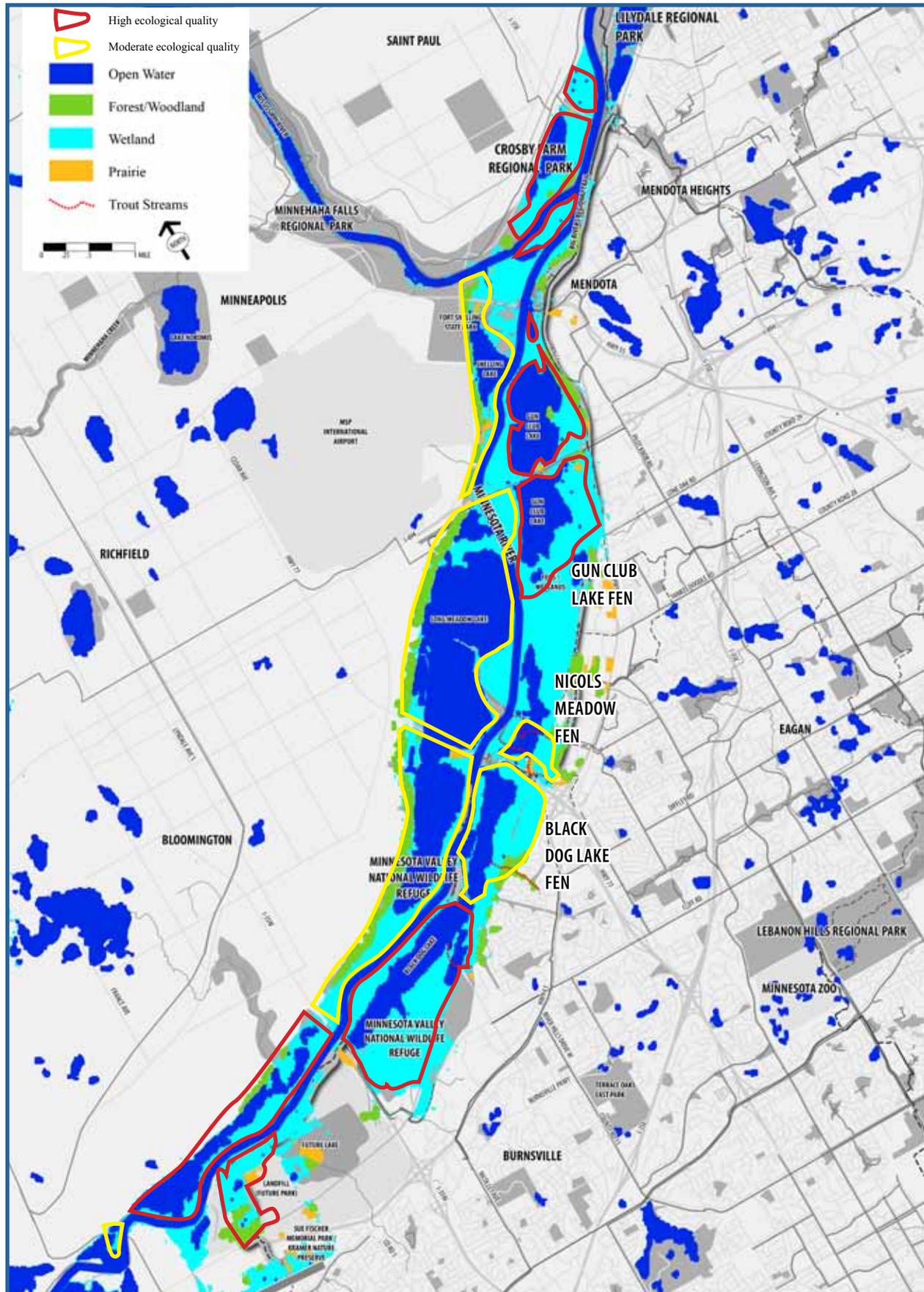
As illustrated in Figure 21, the ecological quality of the Minnesota Greenway is high to moderate for most of the natural plant communities within the floodplain.

Ecological impacts

The primary ecological impact to the valley wetland systems has been due to hydrologic changes from stormwater inputs and reed canary grass invasion in wetlands. The ecological impacts of urbanization to the valley bluff areas have led to lower ecological quality than within the valley. This loss of ecological quality is due to interruption of disturbance regimes (fire), invasive species colonization and habitat fragmentation from urban roads and development.



Figure 21. Existing Land Cover





The plan



Design Framework

The Greenway Guidebook provides the framework for this master plan:

- ▶ Regional trail for recreation and transportation that follows water and natural features
- ▶ Is a year-round facility
- ▶ Provides frequent trailheads and access points
- ▶ Grade separated crossings of major roads
- ▶ Has a consistent design with natural signature and high-quality support facilities
- ▶ Has lighting for evening use in appropriate locations
- ▶ Links recreation destinations and activity centers
- ▶ Acts as a spine for loop trails
- ▶ Maximizes borrowed views
- ▶ Uses wayfinding as a systemwide unifying element
- ▶ Universally accessible
- ▶ Incorporates sustainability by using recycled materials, pervious pavement, energy-efficient lighting and enabling nonmotorized transportation

a. Overview

The Minnesota River Greenway is an oasis of nature in the heavily urbanized metropolitan area. As it has for centuries, the river will continue to draw people. The Minnesota River Greenway will provide continuous access to this already rich natural resource. The Minnesota River Greenway, like all of Dakota County's greenways, will integrate recreation, transportation, water quality and habitat. This chapter is the plan for the Minnesota River Greenway — it describes what features will be included in the greenway and the projects needed to realize the greenway. The plan chapter is presented in four sections:

- ▶ B. Development — Outlines the defining recreation and transportation features of the greenway.
- ▶ C. Key initiatives — Describes specific development and natural resource projects for each greenway segment.
- ▶ D. The interpretive plan — Identifies interpretive themes and subthemes for the greenway and provides a framework for cultural and environmental interpretive elements.
- ▶ E. The stewardship plan — Addresses habitat stewardship and water resources.

b. Development

Access to recreation is one of the four foundational elements of Dakota County greenways. The primary recreation feature of the greenway is a continuous regional destination trail for nature-based recreation and nonmotorized transportation. While the greenway varies in width from 100 feet to more than 1.5 mile throughout the corridor, this chapter focuses on the design of the 30-foot trail corridor to create a safe, amenity-rich trail for year-round use.

Figure 24. Typical trail corridor section

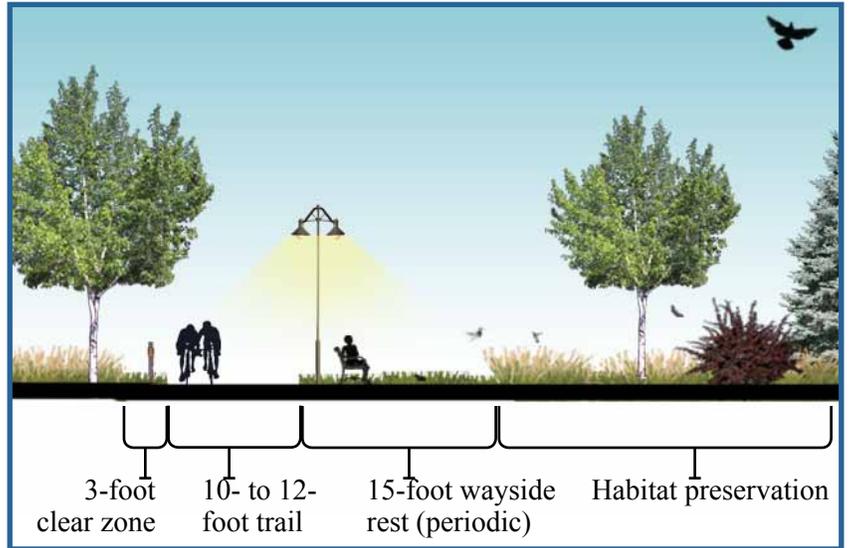
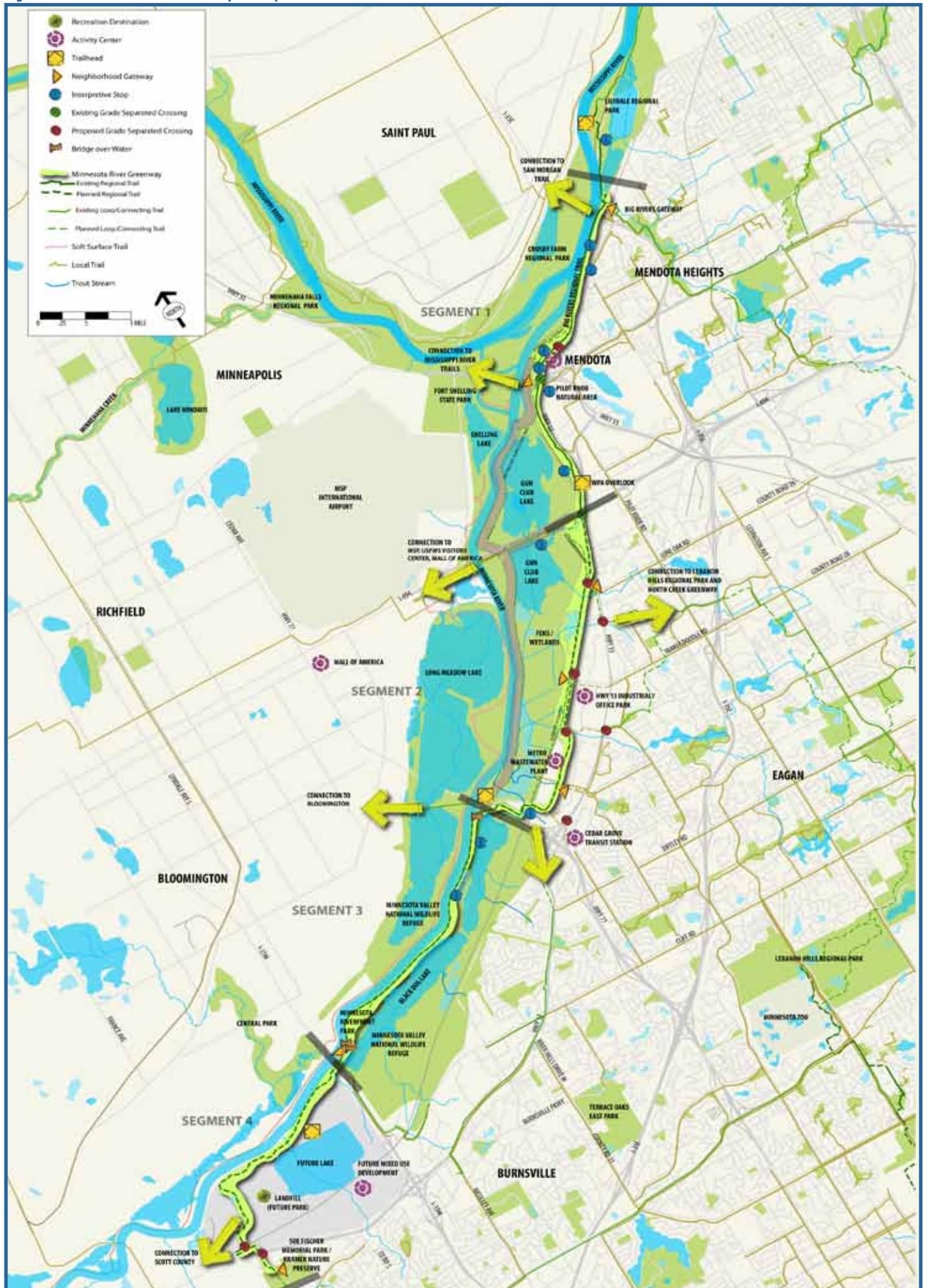


Figure 24. Minnesota River Greenway typical sections (not to scale)



Figure 25. Minnesota River Greenway Concept Plan



Design consistency is critical in developing Dakota County greenways to create a high-quality, unified and legible system. The Greenway Guidebook identifies the elements that will be signatures of the greenway system, listed in the sidebar at left. How the Minnesota River Greenway addresses each of these topics is discussed in this chapter.

TRAIL CORRIDOR FEATURES AND DESIGN

This section addresses design features that are signatures of Dakota County's greenway system. Design touches many facets of the trail alignment, including: the relationship of the trail alignment to the larger greenway corridor; the ability to connect destinations; the presence and location of grade separated crossings, trailheads and support facilities; the style and location of furnishings and wayfinding; accessibility; and sustainability. Consistent, high-quality design will elevate the greenway experience above that of a utilitarian trail to a first-class regional destination.

Figure 26. Recreation destinations and activity centers

RECREATION DESTINATIONS



Minnesota River Greenway Recreation Destinations include Lilydale Regional Park, Fort Snelling State Park, Quarry Lake, the Minnesota Valley National Wildlife Refuge, the Mississippi National River and Recreation Area and the proposed future park at the Burnsville landfill site.

ACTIVITY CENTERS



Source: Bing Maps



Source: thetransitcamera.blogspot.com

Minnesota River Greenway activity centers include historic downtown Mendota, the Highway 13 industrial and office park complex, Cedar Grove Transit Station with Cedar Avenue bus rapid transit and the future development at the Burnsville landfill site.



TRAIL CORRIDOR

The regional trail within the greenway corridor will be a continuous multipurpose bituminous trail designed in accordance with applicable American Association of State Highway Transportation Officials guidelines, Mn/DOT bicycle design guidelines and Dakota County trail standards. The trail will be 10 to 12 feet wide with a 3-foot grass clear zone on each side. The regional trail within the Minnesota River Greenway is expected to retain the name Big Rivers Regional Trail for its entirety in Dakota County. Anticipated uses include walking, jogging, inline skating and bicycling. The trail will be maintained for winter use and where appropriate, lighted.

RECREATION DESTINATIONS, ACTIVITY CENTERS AND TRAIL CONNECTIONS

Inherent to greenways are the trails linking recreation destinations and activity centers, the social gathering places along the trail. Opportunities to stop along the trail to fish, observe wildlife or eat lunch are some of the features that will make the Minnesota River Greenway a regional destination drawing people from a broad area. The Minnesota River Greenway will be a spine for loop trails, connect to regional trails and roads and will itself serve as an important transportation route.

TRAILHEADS AND NEIGHBORHOOD GATEWAYS

Frequent access is a priority for the Minnesota River Greenway. Two generalized types of greenway and trail access points are recommended: Trailheads are intended for regional and local access; neighborhood gateways primarily are for local access at opportune locations. Typically, access points will be at recreation destinations, activity centers and trail intersections. Here trail users will find support facilities such as water and restrooms as well as greenway information.

Trailheads are the primary greenway access points and will serve people who drive, walk, bike or take transit to the greenway. They will occur every 3 to 5 miles and share facilities such as parking and restrooms with other facilities.

Trailheads will include:

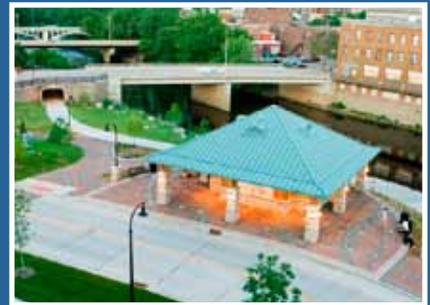
- ▶ Water
- ▶ Motor vehicle parking
- ▶ Secure bicycle parking
- ▶ Picnic areas and/or facilities
- ▶ Wayfinding and traffic control
- ▶ Restrooms
- ▶ Interpretation
- ▶ Benches
- ▶ Food where opportune
- ▶ Shelter and shade
- ▶ Local and/or regional trail connections

Figure 27. Trailhead examples

TRAILHEADS



Source: Jones and Jones Architects and Landscape Architects



Source: www.downtown-eauclaire.com



Source: HKGI



Neighborhood Gateways are more frequent, local access points. They will be at convenient intervals between primary trailheads (2-3 miles or closer at logical locations). Wherever possible, facilities are shared with other uses and ideally are located where there is a complimentary recreation destination or activity center.

Neighborhood gateways will include the following elements:

- ▶ Benches
- ▶ Local and/or regional trail connections
- ▶ Secure bicycle parking
- ▶ Wayfinding and traffic control
- ▶ Water
- ▶ Interpretation

Neighborhood gateways may also include as shared facilities:

- ▶ Restrooms
- ▶ Picnicking
- ▶ Food
- ▶ Motor vehicle parking

ROAD AND RAILROAD CROSSINGS

Grade separated crossings are a critical component of Dakota County’s greenway trail system. Grade separation promotes safety by reducing conflicts with motorized traffic and allows for more efficient and enjoyable trail experience for users of all abilities. To that end, grade separated crossings are suggested at all major intersections, shown in Figure 29.

Grade separations on the greenway system should be of the highest quality possible to ensure safety, security and to establish the greenway system as a truly special and high-quality destination.

The regional trail alignment crosses the Union Pacific Railroad in several locations. To avoid conflicts with the railroad, grade separated railroad crossings are recommended as shown in Figure 29.

At-grade crossings

When grade separated crossings are not possible on collector roads or higher, crossing should occur at controlled intersections with road users stopping at traffic lights or stop signs. On lower volume local roads, crossings may not be controlled with traffic lights or stop signs. In these cases, features such as pavement marking, refuge islands and bumpouts should be applied to reduce crossing distances for trail users and increase visibility for trail users and road users.

ACCESSIBILITY

Dakota County is committed to offering universal accessibility at all trail facilities. The primary paved trail and all access points suggested in the master plan are located and planned for universal accessibility to provide all visitors with a meaningful experience.

GRADE SEPARATED CROSSINGS

Underpass



Source: HKGi

Railroad Underpass



Source: 106 Group



Figure 29. Grade separated road and railroad crossings map



Figure 29a. Typical railroad underpass

SUSTAINABILITY

Sustainability is at the core of the greenway concept. Improving ecological function, habitat creation, wildlife movement, stormwater infiltration and carbon sequestration as well as facilitating non-motorized recreation and transportation are all greenway objectives.

Greenways will be assembled in environmentally sustainable ways and designed to minimize impact on natural systems. Recommended strategies include:

- ▶ Protecting and restoring natural systems
- ▶ Emphasizing native plant species
- ▶ Reducing maintenance costs by promoting self sustaining wildlife and plant communities, treating stormwater on-site
- ▶ Use recycled materials, pervious pavement and
- ▶ Energy-efficient lighting and use of timed lighting and thermostats

SITE FURNISHINGS

One of the key features of the greenway system is having a consistent design signature for site furnishings. Families of greenway furnishings (benches, bike racks, lighting and trash receptacles) will be consistent at all trailheads, neighborhood gateways and other resting areas along the greenway and will be recognizable throughout the countywide greenway system.

LIGHTING

Lighting is an essential component for safety and to make the greenway functional as a transportation corridor in the winter and fall months when the days are short. For safety and navigation, lighting is paramount at all greenway access points, trailheads, neighborhood gateways and trail connections. In these places, it is recommended that lighting be incorporated into initial design and construction. In areas with potential for high commuter use because of population density, trail connections and destinations, it is recommended that continuous trail lighting be installed.



Long-term, lighting should be installed at the two major activity centers along the greenway: downtown Mendota and the future mixed use in Burnsville. Figure 30 shows priority lighting areas.

Figure 30. Lighting areas

WAYFINDING

Wayfinding is the way people navigate from place to place. For the Dakota County greenway system a consistent wayfinding system is essential for orientation, navigation and safety. Signage should be consistent across the system and should guide greenway users to local services, cultural destinations, transportation connections, activity centers, recreation destinations, cities, neighborhoods and other landmarks.

Sample wayfinding

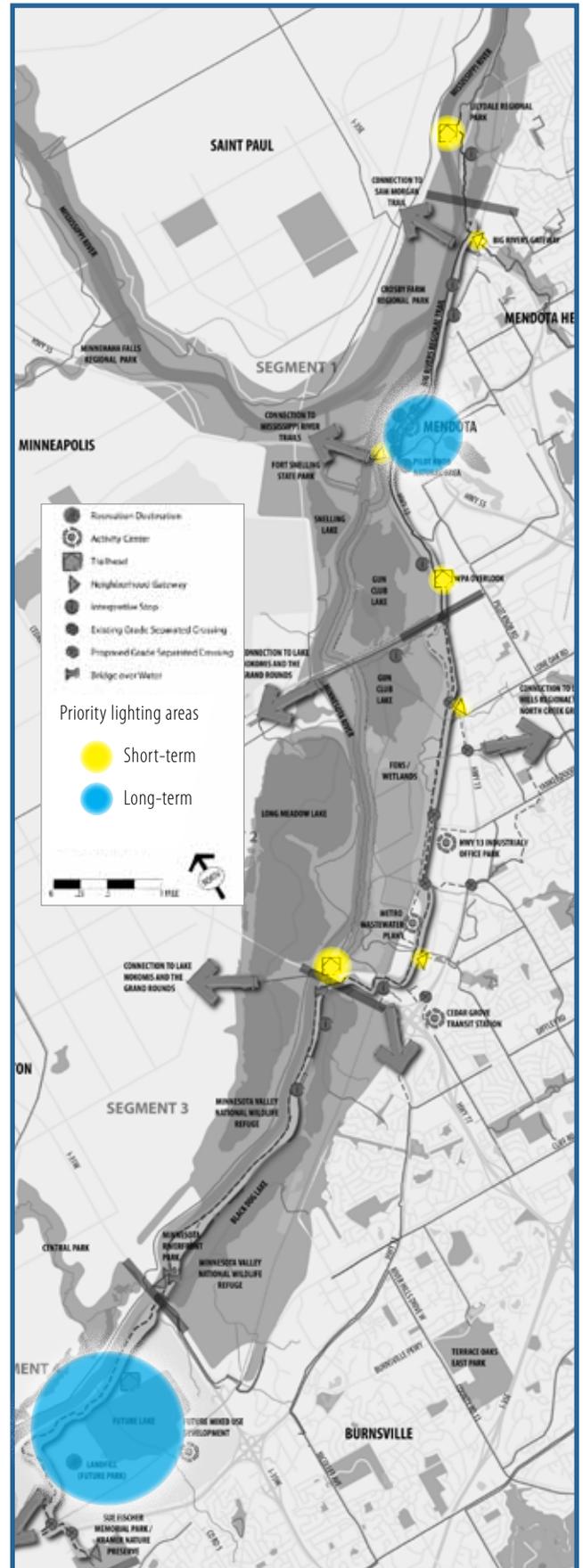
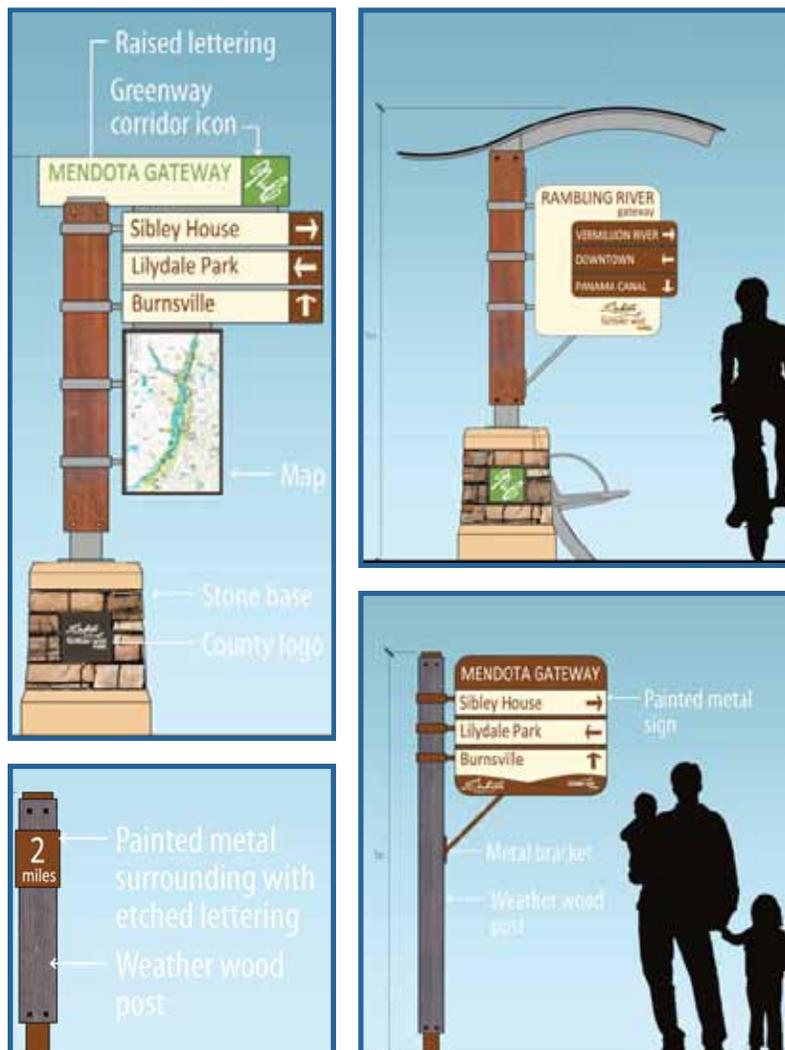
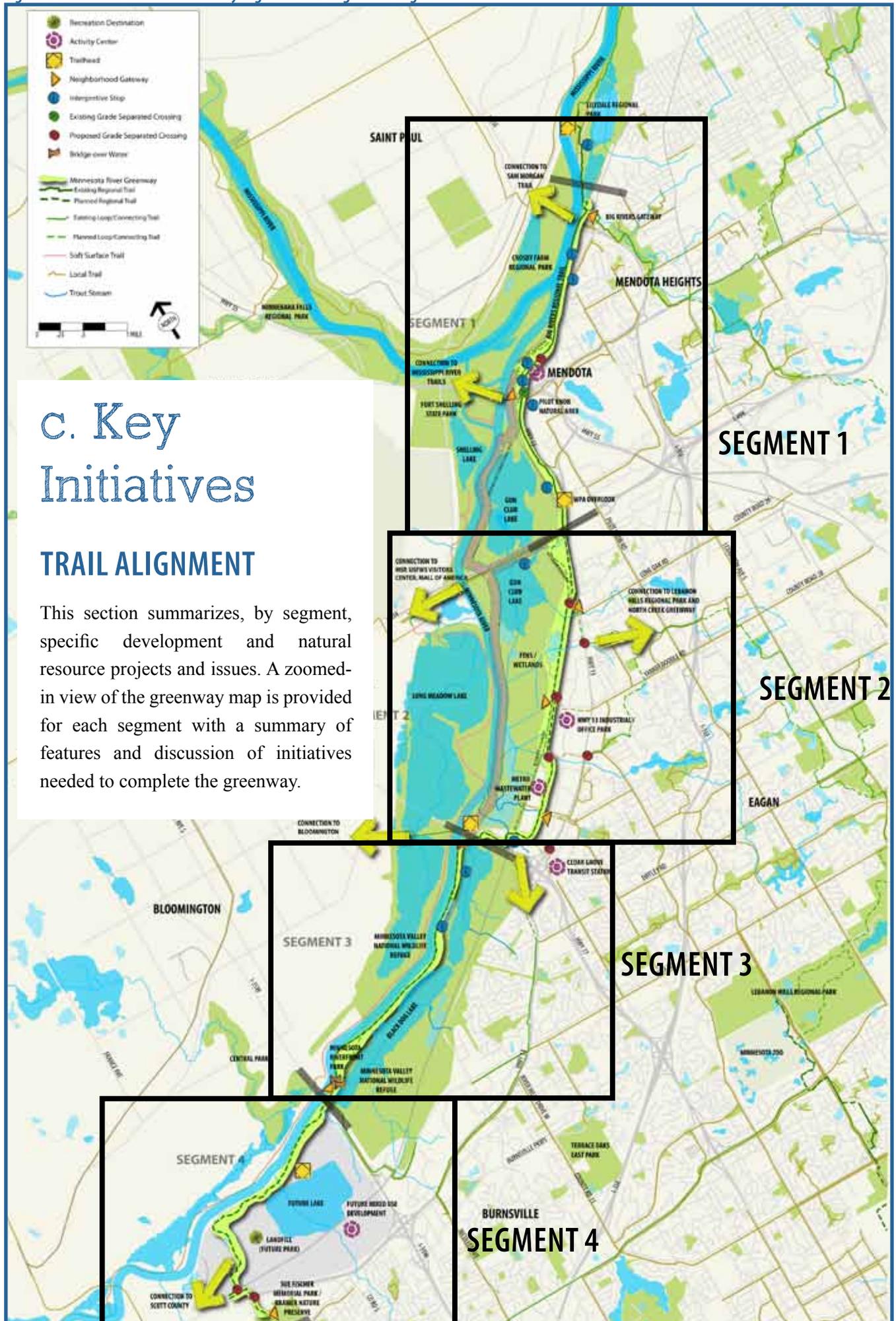


Figure 31. Minnesota River Greenway regional trail alignment segments



c. Key Initiatives

TRAIL ALIGNMENT

This section summarizes, by segment, specific development and natural resource projects and issues. A zoomed-in view of the greenway map is provided for each segment with a summary of features and discussion of initiatives needed to complete the greenway.

SEGMENT 1

SEGMENT 2

SEGMENT 3

SEGMENT 4

Lilydale Regional Park to I-494

Recreation destinations

- ▶ Lilydale Regional Park
- ▶ Fort Snelling State Park

Activity centers

- ▶ Downtown Mendota

Trailheads

- ▶ Lilydale Regional Park
- ▶ The WPA Overlook

Neighborhood gateways

- ▶ Current Big Rivers Regional Trail Trailhead
- ▶ Downtown Mendota

Loop trail opportunities

- ▶ Connections to trails in Lilydale Park
- ▶ Connections to the North Urban Regional Trail
- ▶ Connections to St. Paul via I-35E bridge
- ▶ Connections to Hennepin County via I-494 bridge
- ▶ Connections to the soft surface trail along the Minnesota River in Fort Snelling

Proposed grade separated crossing:

- ▶ Highway 13 northeast of Downtown Mendota

Segment 1: Lilydale Regional Park to I-494 (5 miles)

The regional trail in the Minnesota River Greenway begins at the boundary of Lilydale Regional Park and follows the existing Big Rivers Regional Trail. With the exception of a trail gap between Lilydale Park and the Big Rivers Regional Trail, this section of the trail is complete. The existing trail allows for blufftop views of the Minnesota River near the confluence of the Mississippi and Minnesota rivers, skirts downtown Mendota and continues southwest to the existing WPA overlook and I-494.

Trail gap: Lilydale Regional Park to the Big Rivers Regional Trail and Big Rivers gateway

The trail gap between Lilydale Regional Park and Big Rivers Regional Trail is challenging due to limited road right of way and existing railroad tracks. Closing the gap will require coordination with Union Pacific Railroad. Figure 34 shows the proposed alignment to close this gap. Enhancements to the Big Rivers Trail Gateway, also shown in Figure 34, include a picnic area and restrooms as well as natural resource restoration. Dakota County staff worked with City of St. Paul staff to apply for funding to address this gap. The County and City will continue to coordinate future efforts to connect Big Rivers Regional Trail to St. Paul.

Downtown Mendota

Downtown Mendota, with its restaurants, the historic Sibley and Faribault houses and connections to Fort Snelling State Park has potential to be a significant recreation destination and activity center. Figure 35 depicts enhanced trail connections and support facilities for downtown Mendota.

WPA overlook and trailhead

This area presents an opportunity to enhance the WPA overlook as a major trailhead and add picnic facilities, restrooms, additional motor vehicle parking and secure bicycle parking. Opportunities to partner with Fort Snelling State Park to enhance the historic WPA camp should be explored.

Natural resources and water quality

Big Rivers Regional Trail gateway

- ▶ Better manage the intermittent stream adjacent the parking lot with a planted buffer and stormwater diversion to a raingarden
- ▶ Remove invasive species and prevent further spread on the site

WPA overlook and I-494

- ▶ Manage buckthorn in oak woodlands; marshes need continuous management to prevent complete comeback
- ▶ Manage buckthorn and burdock in swamps and wetlands



Figure 33. Minnesota River greenway segment 1 concept plan

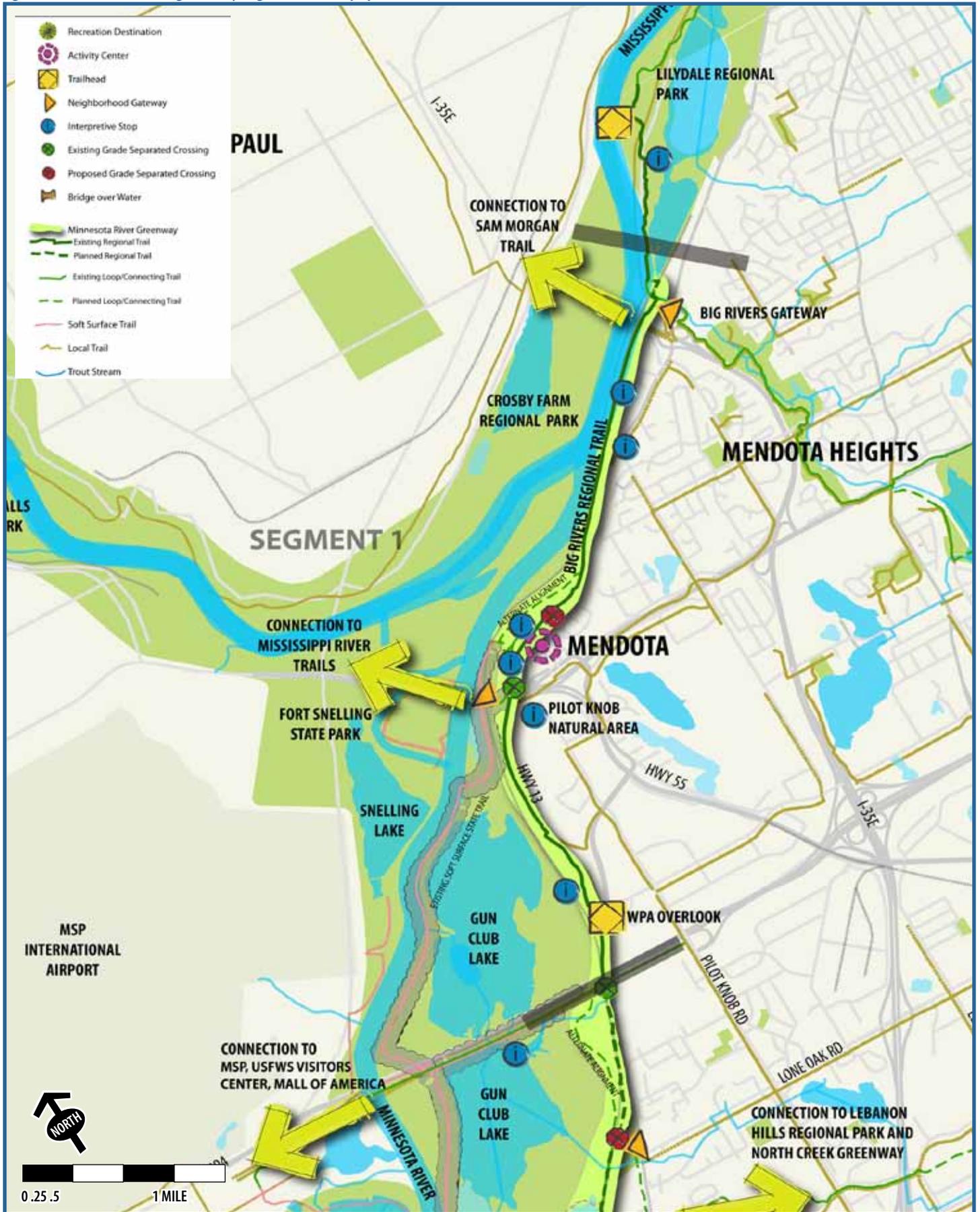


Figure 34. Lilydale neighborhood gateway and connection to Lilydale Regional Park

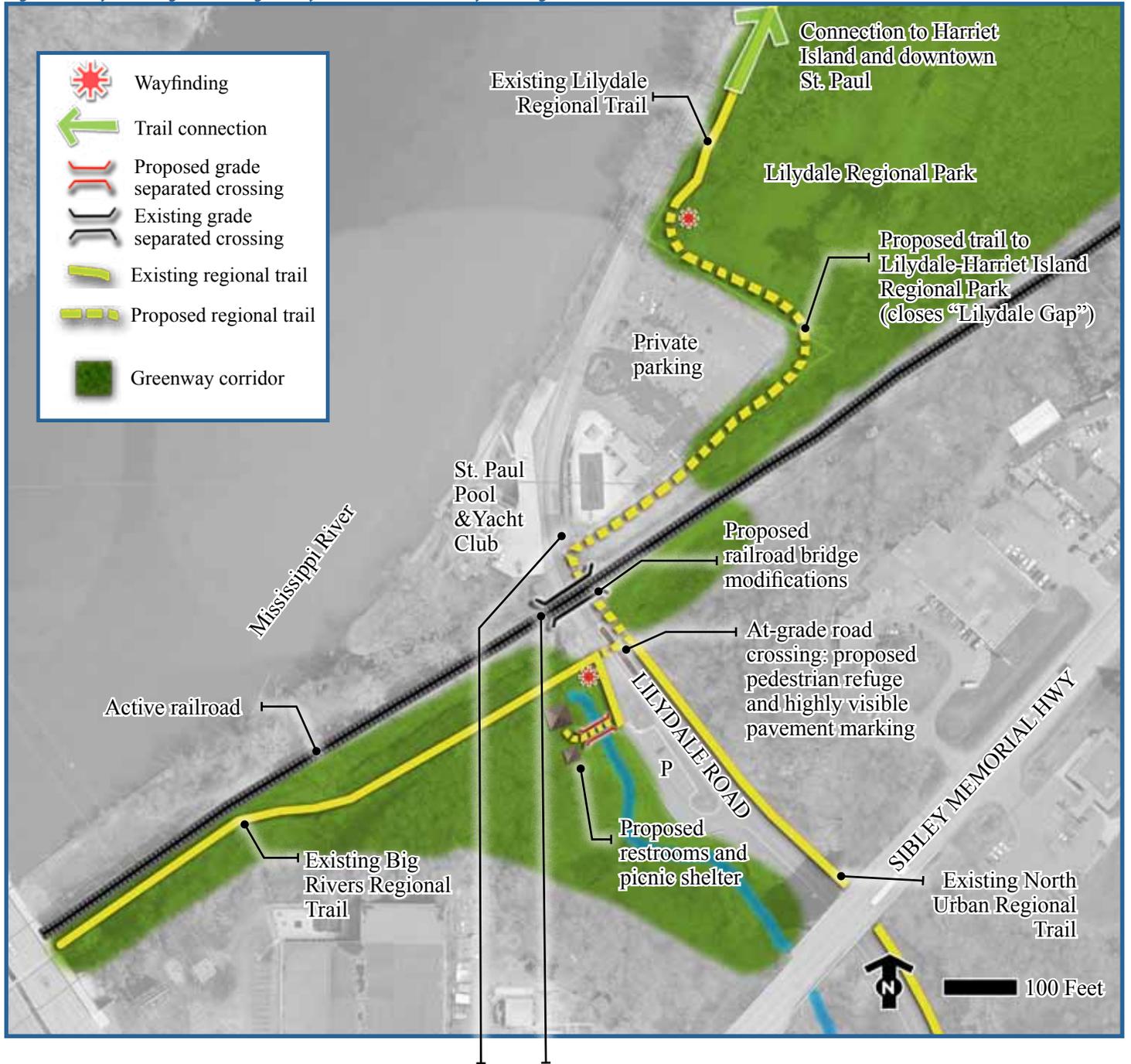


Figure 35. Downtown Mendota trailhead and connections



I-494 to Cedar Ave/TH77

Recreation destinations

- ▶ Quarry lake (future)
- ▶ Fort Snelling State Park

Activity centers

- ▶ Highway 13 office/industrial park
- ▶ Cedar Grove Transit Center

Trailheads

- ▶ At the Minnesota River / current DNR Boat Launch at Cedar Avenue

Neighborhood gateways

- ▶ Lone Oak Road
- ▶ Connection to Eagan south of Seneca wastewater plant

Loop trail opportunities

- ▶ Local trail connections to Eagan at Lone Oak, Yankee Doodle, Blackhawk, and Silver Bell roads; and northeast of Cedar Avenue
- ▶ Future connection to Lebanon Hills
- ▶ Future connections to Hennepin County, possibly including the Long Meadow Lake bridge area

Segment 2: I-494 to Cedar Ave/TH77 (4 miles)

Trail alignment

There is a trail gap from I-494 to Cedar Ave/TH77. Locating a trail between I-494 and Cedar Avenue has many challenges, including:

- ▶ Between the railroad corridor and the Minnesota River is a highly sensitive wetland and fen complex. Issues include difficulties of building on wetlands, seasonal flooding, high water table and sensitivity of the fens.
- ▶ The railroad is a barrier to local trail access. Tunnels under the railroad will be needed for access to Eagan and Lebanon Hills Regional Park.
- ▶ A highly contaminated dump site just south of I-494
- ▶ Traffic and security issues with the Seneca Wastewater Treatment Facility

Generally, from the perspective of trail users, an alignment on the river side of the railroad is desirable, but due to the above constraints, some or all of the trail might have to be east of the railroad. Figure 37 shows preferred and alternate alignments. Final alignment could be either or a combination of the options.

Preferred alignment

The preferred alignment generally follows the southeast side of the railroad, avoiding wetlands, fens and dump sites and allowing for connections to Eagan and Lebanon Hills Regional Park. The trail jogs to the northwest of the tracks near the quarry lake, providing recreation opportunities and views of the river valley. Southwest of the lake, the trail would return to the east side of the tracks along the edge of the Metropolitan Council's Seneca Wastewater Treatment Facility. Three grade separated crossings are recommended: one at an existing culvert north of the quarry lake, one at Comanche Road and a tunnel south of the lake.

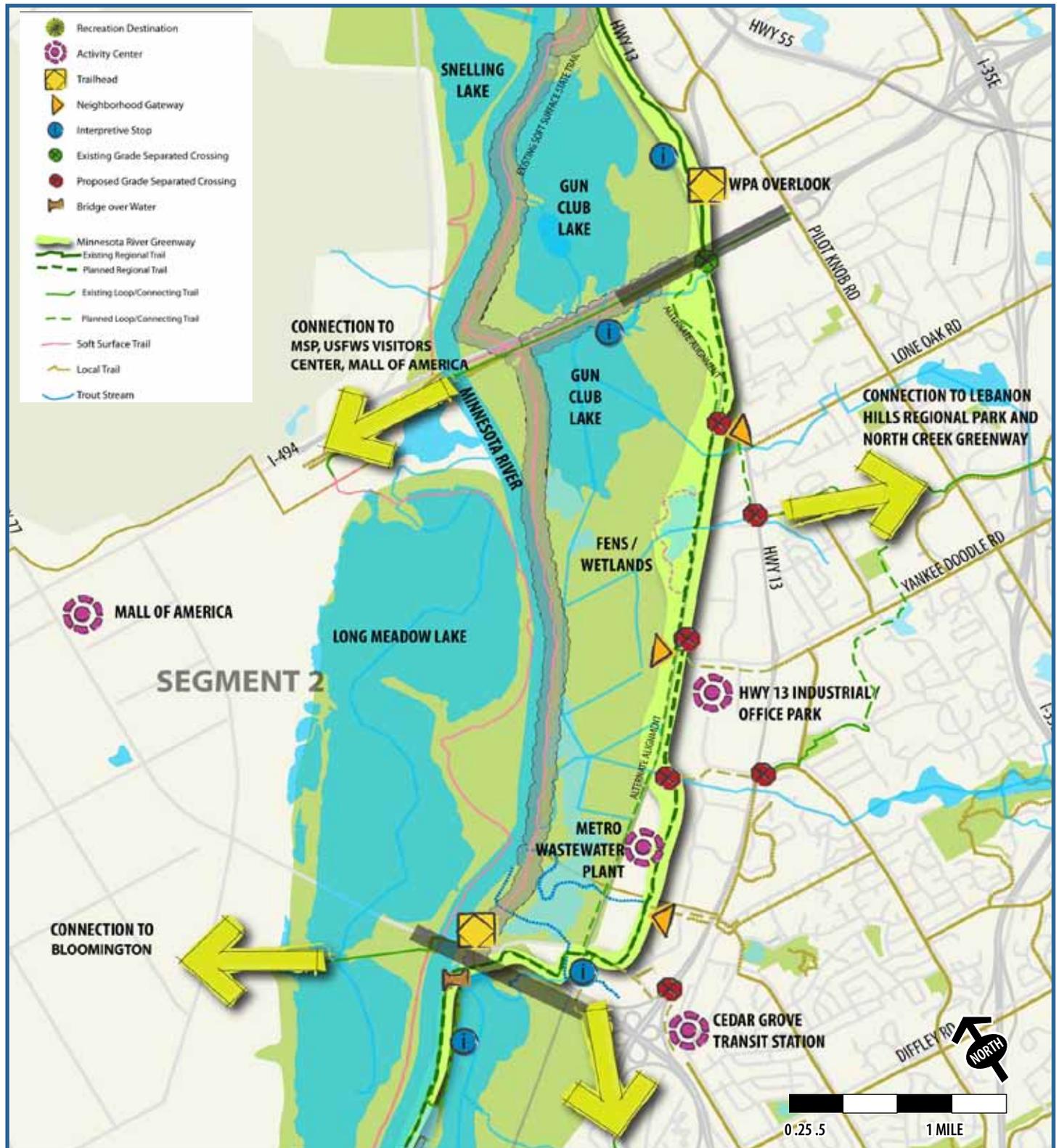
Alternatives

Alternatives exist on the opposite side of the railroad corridor from the preferred alignment in this section. The alternatives:

- ▶ Northeast portion — use the existing 494 bridge to cross to the west side of the railroad, dropping around the dump site and generally following a former Fort Snelling State Park trail.
- ▶ Middle portion — weave through the industrial development southeast of the railroad to a new railroad underpass south of the quarry lake.
- ▶ Southwest portion — the alternate route would travel on the river side of the railroad tracks, following the 710 elevation through Nicols Meadow Fen to Silver Bell Road.



Figure 37. Minnesota River greenway segment 2 concept plan



Cedar Avenue trailhead

The master plan recommends that the existing DNR boat launch be improved as a primary trailhead with picnic and restroom facilities. Figure 38 shows a detail of the trailhead area and connections to the Cedar Grove Transit Station in Eagan, Long Meadow Lake Bridge, Bloomington, Richfield and Minneapolis via the planned Intercity Regional Trail.

Quarry lake

This segment of the greenway presents opportunities for water quality improvement, wetland and fen habitat and plant community restoration. Fens are a rare habitat that should be restored and preserved. There is also a quarry lake that has potential for recreational use as a fishing hole, swimming area, picnic area and overlook. A railroad tunnel or crossing is essential to provide access to this area.

Figure 38. Cedar Avenue boat launch and trailhead



Natural resources and water quality

Nicols Meadow Fen

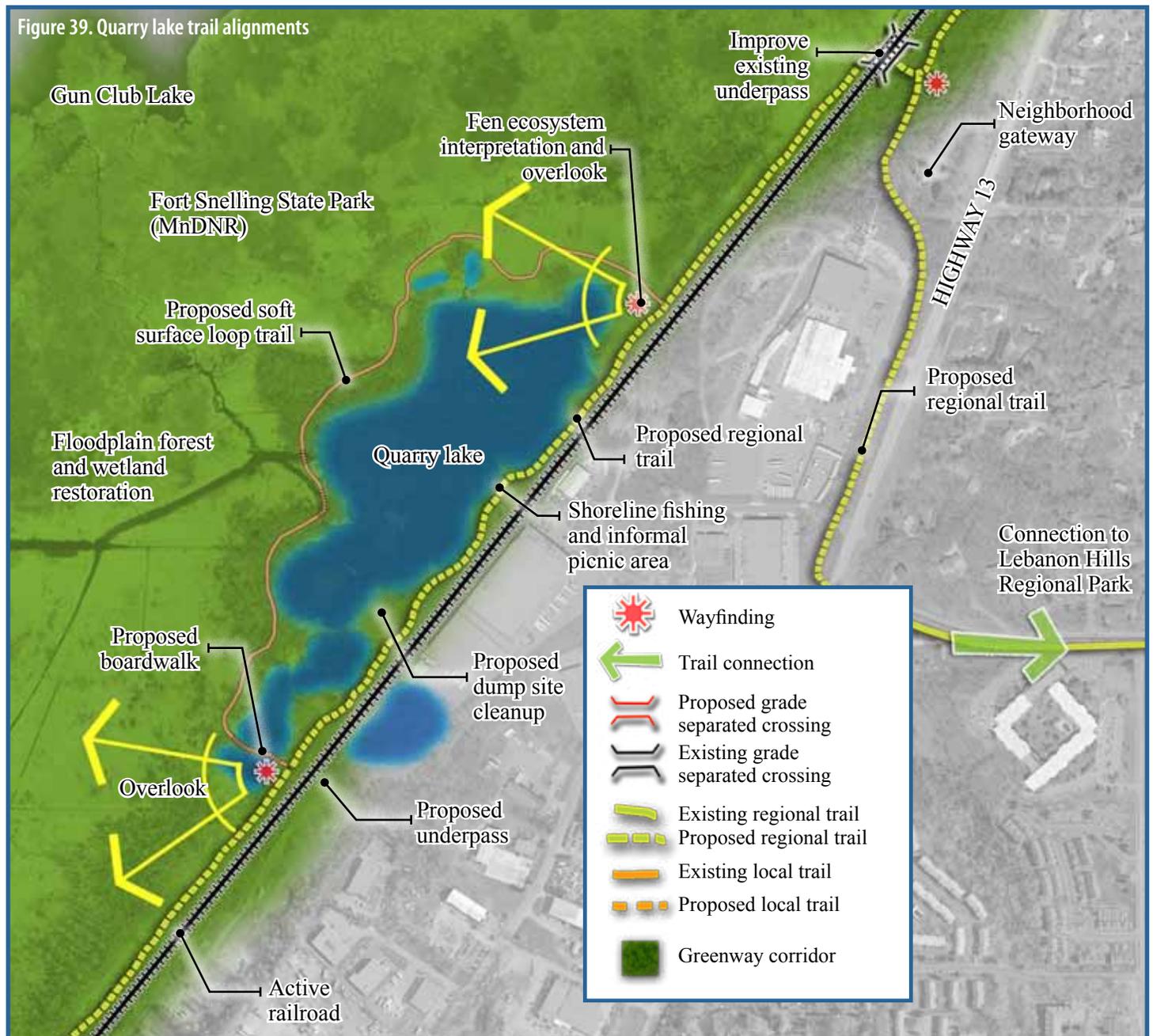
- ▶ Begin restoring fen soon to prevent buckthorn from overtaking the area. Remove larger amounts of buckthorn from the east of the fen. Removal or management of second-growth boxelder is needed. Manage reed canary grass.

Fort Snelling Fen and habitat management around quarry lake

- ▶ Fen restoration and invasive species management.
- ▶ Restore native vegetation and manage invasive species around quarry lake.

Trout stream restoration

- ▶ Restoration of three trout streams
- ▶ Protection of trout stream watersheds



Segment 3: Cedar Avenue/TH77 to I-35W (3.5 miles)

Trail alignment

In this section, the greenway trail will closely follow the Minnesota River through the Minnesota Valley National Wildlife Refuge, roughly following the Black Dog Road alignment. In this area, the alignment is at the bottom of the river valley, allowing visitors to experience the river up close.

The city of Burnsville recently received a federal Transportation Enhancement grant to partially fund this portion of the regional trail in 2013/2014.

Flooding

Seasonal flooding will result in occasional trail closure and require higher levels of maintenance and repair than other regional trail segments. Trail design will include strategies and techniques that will minimize flooding impact.

Natural resources and water quality

- ▶ Native plant community restoration to a combination of floodplain forest and native grassland is recommended.
- ▶ Floodplain forest restoration

Cedar Ave/TH77 to I-35W

Recreation destinations

- ▶ Minnesota Valley National Wildlife Refuge

Trailheads

- ▶ At the Minnesota River / DNR boat launch at Cedar Avenue

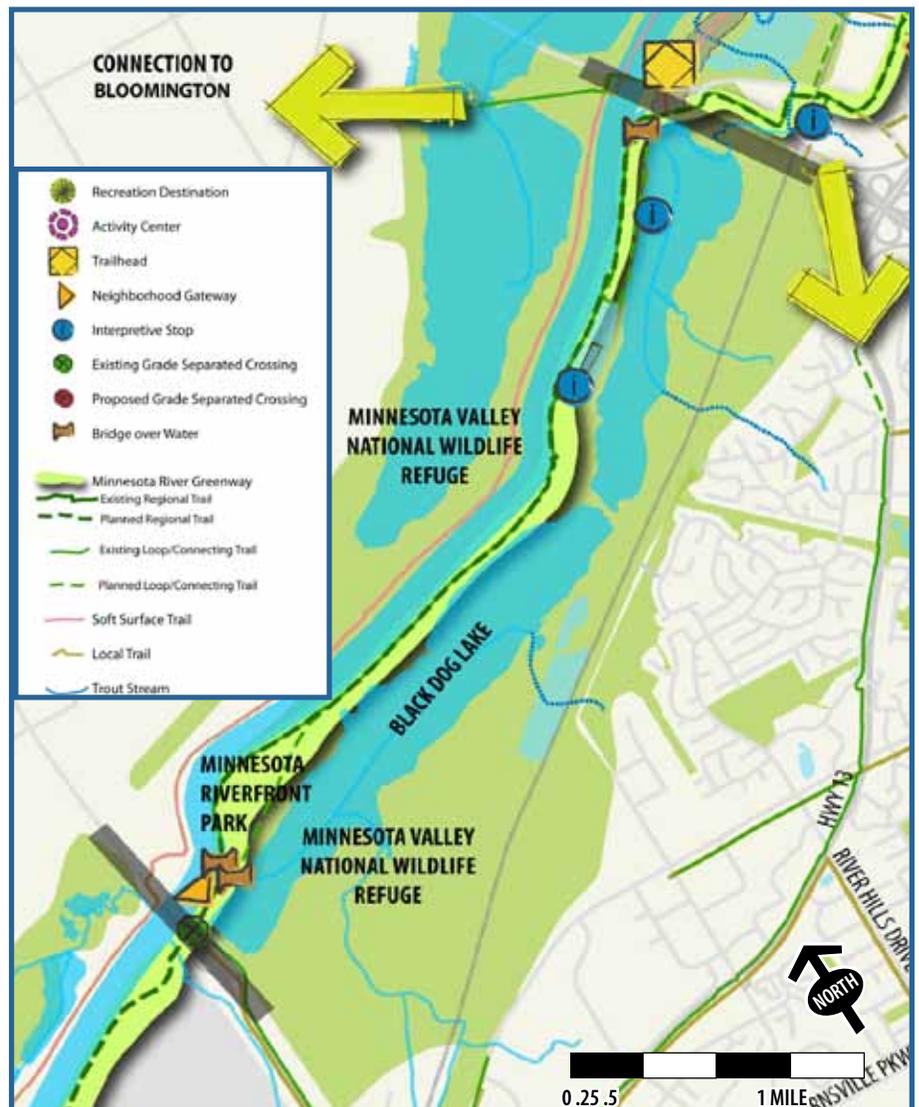
Neighborhood gateways:

- ▶ City of Burnsville's Minnesota Riverfront Park

Loop trail opportunities:

- ▶ Short loops within the wildlife refuge — east of Cedar Avenue and west of I-35W

Figure 40. Minnesota River Greenway segment 3 concept plan



Segment 4: I-35W to Scott County (4 miles)

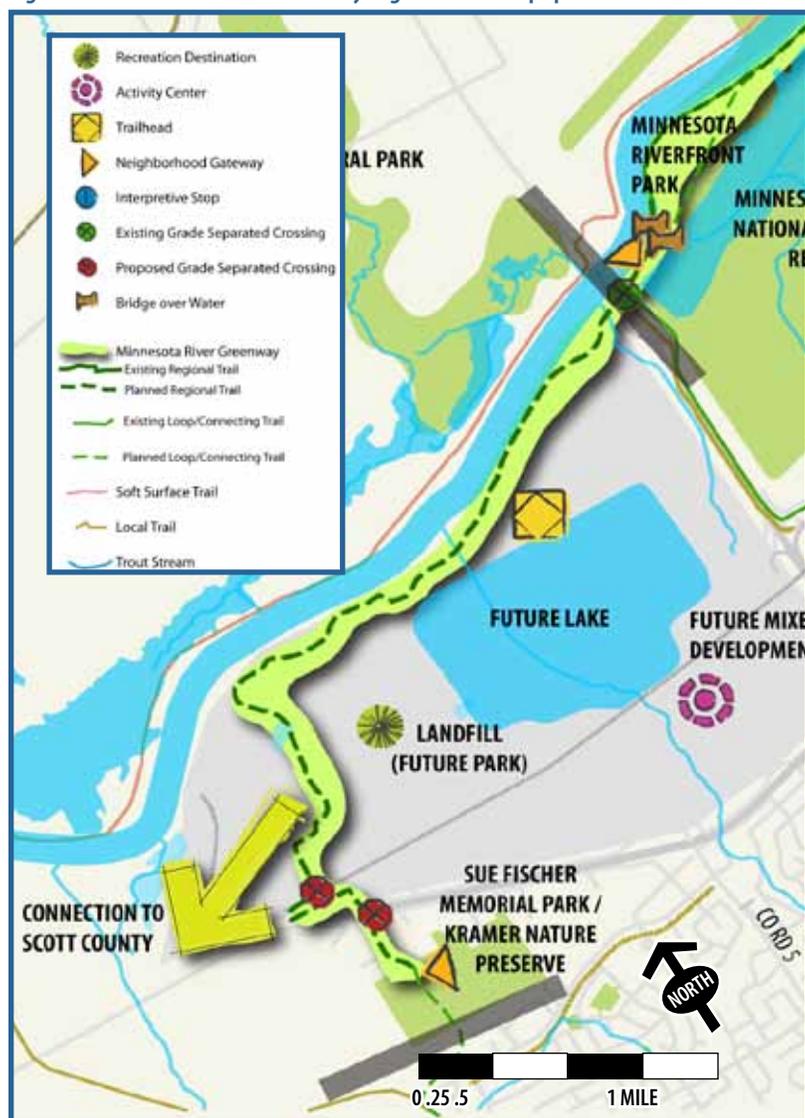
Trail alignment

Southeast of I-35W, the trail will continue along the Minnesota River to Scott County to connect with future regional trails. This area currently is a gravel mine and landfill. The city plans to redevelop this area with a mix of commercial, industrial, housing and recreational uses. Recreational features will include a large quarry lake, a golf course on the current landfill site and a riverfront park. The city's comprehensive plan acknowledges the future development of the regional trail. The future trail and greenway will be integrated into development plans, but will connect to Scott County Trails at Burnsville's Sue Fischer Memorial Park/Kraemer Nature Preserve south of Highway 13. There are two options for making this connection.

Option 1

The greenway will follow the Minnesota River until the Scott County boundary and then travel south to Sue Fischer Memorial Park/Kraemer Nature Preserve. The advantage of this option is remaining along the river as much as possible. An underpass would be needed at Highway 13 and Chowen Avenue South.

Figure 41. Minnesota River Greenway segment 4 concept plan



I-35W to Scott County

Recreation destinations

- ▶ Minnesota River Quadrant redevelopment
- ▶ Sue Fischer Memorial Park and Kraemer Nature Preserve

Activity centers

- ▶ Future development in Burnsville's Minnesota River Quadrant

Trailheads

- ▶ Incorporated into a new riverfront park in Burnsville, as part of Minnesota River Quadrant redevelopment.

Neighborhood gateways

- ▶ Sue Fischer Memorial Park/Kraemer Nature Preserve

Loop Trail Opportunities

- ▶ Future loop trails in Quarry Park redevelopment area in Burnsville.
- ▶ Connections to future Scott County trails



Option 2

The greenway would travel through the center of the redevelopment area to align with a planned interchange at Highway 13 and Highway 5. In this case, the trail would follow Highway 5, bridging Highway 13. After crossing Highway 13, the greenway would travel south to Sue Fischer Memorial Park/Kraemer Nature Preserve.

Natural resources and water quality

Kraemer Quarry / Burnsville Landfill

- ▶ Buckthorn management is recommended to prevent spread.
- ▶ Periodically manage restored wetland area.
- ▶ Monitoring of forest regeneration in the floodplain is recommended.

Plan for Kraemer Quarry / Burnsville landfill



d. Interpretive plan

In today's world, people's connections to culture, land, nature and community have become detached. Some cannot imagine the prairie before the metropolis, the wheat before the bread, or the world before Columbus. We forget, or never learn, the stories that define the significant places in our lives. Place-based interpretation seeks to tell the story of places or to reveal connections between social and natural systems distinctive to each site. It is an approach rooted in the belief that people can benefit from understanding the stories of the places they visit.

Dakota County has long been committed to sharing the stories of special places that comprise the county's parks and trails. Through interpretative programs and exhibits, Dakota County strives to create awareness and appreciation of the county's history, culture and environment. As the county expands its greenway system, interpretation for each greenway is a goal for the planning and development process.

Interpretive planning designs educational experiences that support an organization's vision and mission. The planning process considers the place-specific historical, cultural and natural resources to be interpreted and the demographics and interests of the people who use the site in order to develop relevant messages and media in support of an organization's mission. In the case of Dakota County, interpretation ought to support Dakota County Park's mission: To enrich lives by providing high-quality recreation and education opportunities in harmony with natural resource preservation and stewardship.

RESOURCES

In considering what is special and unique about the Minnesota River Greenway, it is helpful to identify some of the most outstanding resources found along the greenway corridor. These resources create a unique setting, or sense of place, and are places where stories of nature, history and culture intersect in meaningful ways.

Historic and cultural resources include buildings at Fort Snelling, the Sibley House, archaeological sites and Native American burial mounds. Natural resources abound along the Minnesota River and there are efforts to maintain and continue to restore natural habitat along the river. Some of these cultural, historical and natural resources are on public property; however, many are located on adjacent property. Therefore, continued partnerships with adjacent property owners will be essential to developing interpretation along the greenway.

Cultural, historical and natural resources may be vulnerable and potentially compromised with increased traffic and human interaction. Resources such as un-excavated archaeological sites are culturally sensitive and susceptible to looting or vandalism if care is not taken to protect them. Therefore, interpretation of these resources should be sensitive to these potential impacts and Dakota County should work with necessary stakeholders, such as MIAC for burials, to determine an appropriate approach for preservation and interpretation.



Existing interpretive sign along the Big Rivers Regional Trail



KEY MESSAGES

While each greenway in Dakota County’s system will have a theme based on the specific resources of each greenway, it is recommended that Dakota County undertake a systemwide interpretive planning effort to identify overarching themes, or branding, for the greenway system. These overarching themes would represent broader messages that span the system and weave together specific themes for each greenway individually.

In the absence of a systemwide interpretive plan, this master plan suggests one central message for the Minnesota River Greenway. Supporting subthemes are also identified to further develop the theme and provide organization for interpretation. It is recommended that the subthemes be woven throughout the greenway to provide a richly layered and consistent experience. If a systemwide interpretive plan is developed, the themes presented on the following pages should be revised.

INTERPRETIVE THEME

Lured by the landscape: For centuries, the rich natural resources of the Minnesota River have invited the settlement of diverse cultures.

Subthemes

Confluence of cultures: Just as the Minnesota River swells and recedes, such is the weaving of cultures along the shores of the river through time.

An industrious river: For decades, the Minnesota River was considered a resource to be used for industrial and commercial ventures. Industrial and commercial development has altered the river and the land around it.

Discover nature along the Minnesota River: Following a decline in industrial importance, the natural landscape of the Minnesota River is being restored and is in many places flourishing. The Minnesota River Greenway offers opportunities for recreation among a tapestry of rich natural resources.

Active living: In addition to these place-based subthemes, it is recommended that interpretation in the Dakota County greenway system encourages visitors to consider the health benefits of regular moderate physical activity that they can get on greenways. Some interpretation could convey what greenways are and how they differ from standard trails. Mile markers along the trail could also serve as interpretation by linking the distance a visitor has traveled to calories burned. Interpretation could also compare the distance traveled to fuel and money saved by cycling or walking rather than driving.



The wetlands south of I-494



RECOMMENDATIONS

Prepare a systemwide greenway interpretive plan that:

- ▶ Establishes guiding principles for interpretation throughout the greenway system
- ▶ Evaluates visitor preferences and needs related to interpretation
- ▶ Establishes systemwide goals and objectives for interpretation
- ▶ Develops systemwide interpretive themes through a process of staff and stakeholder engagement
- ▶ Identifies the locations where these systemwide interpretive themes will be expressed
- ▶ Identifies interpretive themes for each greenway within the system and establishes a framework for interpretive planning and development
- ▶ Establishes consistent design standards for nonpersonal interpretive media throughout the system
- ▶ Identifies appropriate systemwide media for interpretation (e.g., website, geocaching, tours of multiple greenways)
- ▶ Assesses current interpretive staffing levels and makes recommendations over the short- and long-term
- ▶ Identifies and fosters potential partnerships for interpretive programs within the greenway system
- ▶ Develops a framework for ongoing planning and evaluation of interpretation throughout the greenway system

Establish a systemwide approach to managing interpretation and education.

Recreation, education and interpretation are not fully discrete; collaboration and consistency are important across the system.

Establish a community advisory group.

This group would build relationships among the agencies and organizations that own adjacent property, facilitate an inclusive interpretive planning process, engage community members (especially cultural groups) and ensure that interpretation of the

greenway is thematically and aesthetically cohesive. This group should participate in the development of the systemwide interpretive plan and may then meet periodically to advise Dakota County on specific interpretation questions.

Site specific interpretation:

- ▶ Excavated archaeological sites* interpreted in partnership with the Shakopee Mdewakanton Dakota community
- ▶ Excavated mound groups* interpreted with the consent of and in collaboration with the Minnesota Indian Affairs Council and the Shakopee Mdewakanton Dakota community
- ▶ Pilot Knob
- ▶ Fort Snelling
- ▶ Pike Island/Fort Snelling State Park/Bdote (convergence) of the Mississippi and the Minnesota rivers
- ▶ Picnic Island
- ▶ Mendota historic district
- ▶ Faribault house
- ▶ Sibley house



Sibley House in Mendota



Interpretive media recommendations

- ▶ Interpretive media should not impinge on the natural landscape. As much as possible, Dakota County should adopt the National Park Service’s wayside exhibit approach (www.nps.gov/hfc/products/waysides/index.htm) to interpretation along the greenways. In this approach, the focus is on experiencing the landscape firsthand; interpretation is an enhancement, not the focus.
- ▶ Based on this approach, interpretive signs should be minimal, low profile, accessible to all and purposefully placed.
- ▶ Interpretation should be integrated into orientation signs at key locations along the greenway, such as trailheads and neighborhood gateways. This interpretation should serve to orient the greenway user thematically to the greenway and introduce the visitor to the experiences they can expect along the greenway. Interpretation at these locations could also be artfully integrated into trailhead or gateway facilities such as benches or picnic tables, pavement, fencing and structures.
- ▶ Interpretive signs along the greenway should be considered a caption to distinct or important landscape features a greenway user might not understand simply by looking at the feature. Interpretive signs should be installed along the greenway only if they explain or describe something observable along the greenway. These signs should have brief but engaging text. More detailed or lengthy information should be delivered through other media.



Fort Snelling State Park at the Minnesota River

- ▶ Dakota County should consider developing multimedia interpretation. Audio tours provide an opportunity for unobtrusive interpretation along the greenway for interested users. Self-guided MP3 tours could be developed and made available on the Dakota County Parks website for downloading to personal MP3 devices or phones. Initially a greenway-wide audio tour should be developed based on the greenway theme. As resources allow, additional tours could be developed for subthemes or different age groups.
- ▶ Dakota County should work closely with community partners to ensure that interpretation along the greenway enhances but does not overlap interpretative experience in adjacent or collaborating public spaces.

Site specific interpretation:

- ▶ Migratory birds
- ▶ Wildlife
- ▶ Geology
- ▶ Floodplain forests
- ▶ Wetlands
- ▶ Fens and seepage meadows
- ▶ Seasonal changes
- ▶ Agriculture and its impacts along the river
- ▶ Industrial development and infrastructure: railroads, airport, dams, bridges and roads
- ▶ Industrial development and shipping
- ▶ World War II shipbuilding



e. Stewardship plan

This section makes general and specific natural resource and water quality stewardship recommendations for the Minnesota River Greenway.

The linear nature of the Minnesota River Greenway will require natural resource management strategies that are geographically targeted, cooperative and realistic. Restoration and protection efforts should be focused near trailheads, as these locations will provide the greatest opportunity for greenway users to see the results of stewardship and provide a high-quality user experience. Given the linear nature of the greenway, stewardship activities should be in cooperation with adjoining landowners, public and private. Cooperative stewardship activities likely will be easier with other public agencies, but this should not preclude the possibilities of stewardship work on adjoining private lands. All stewardship actions should be evaluated through the lens of sustainability — is the stewardship effort economically and ecologically sustainable over the long-term.

HABITAT INVESTMENT AREAS

Given the length and breadth of the Minnesota River Greenway corridor, efforts to manage and restore the natural resources and native plant communities would be a daunting task — well beyond the ability of any one agency. To provide for a realistic and sustainable restoration and management of the resources, key habitat investment areas are identified for natural resource management. These habitat investment areas are prioritized and targeted to areas associated with high quality ecological resources and greenway use patterns. These areas are identified in Figure 48.

Table 47. Habitat types

			
HABITAT PRESERVE	HABITAT CORRIDOR	NATURAL LANDSCAPES	DESIGNED LANDSCAPES
Top priority habitat restoration/management	Second priority habitat management	Lowest landscape investment priority	High landscape investment
<ul style="list-style-type: none"> ◆ Adequate patch size/shape to sustain native plant community ◆ Contains existing remnant of native plant community ◆ Has interpretive potential ◆ Has benign surrounding uses ◆ Buffers or contains natural waters 	<ul style="list-style-type: none"> ◆ Provides connection between habitat preserves ◆ Adequate width to sustain native plant ground layer ◆ Grades allow for rainwater infiltration ◆ Buffers natural waters 	<ul style="list-style-type: none"> ◆ Primary task is to control invasive plants ◆ Managed as a natural, low-maintenance landscape 	<ul style="list-style-type: none"> ◆ Managed urban landscapes ◆ Limited habitat value ◆ Relatively small



STEWARDSHIP RECOMMENDATIONS

General considerations for stewardship activities within this investment hierarchy are organized around ecological quality, landscape position and future uses and are described in Table 47.

Vegetation management

In native plant communities — prairie, woodlands and wetlands — invasive species removal, buffer protection or establishment and re-establishment of disturbance regimes will be the key activities. Oak savannas may need to be supplemented with tree plantings and all of the grassland systems will likely need supplemental seeding to restore ground layer diversity.

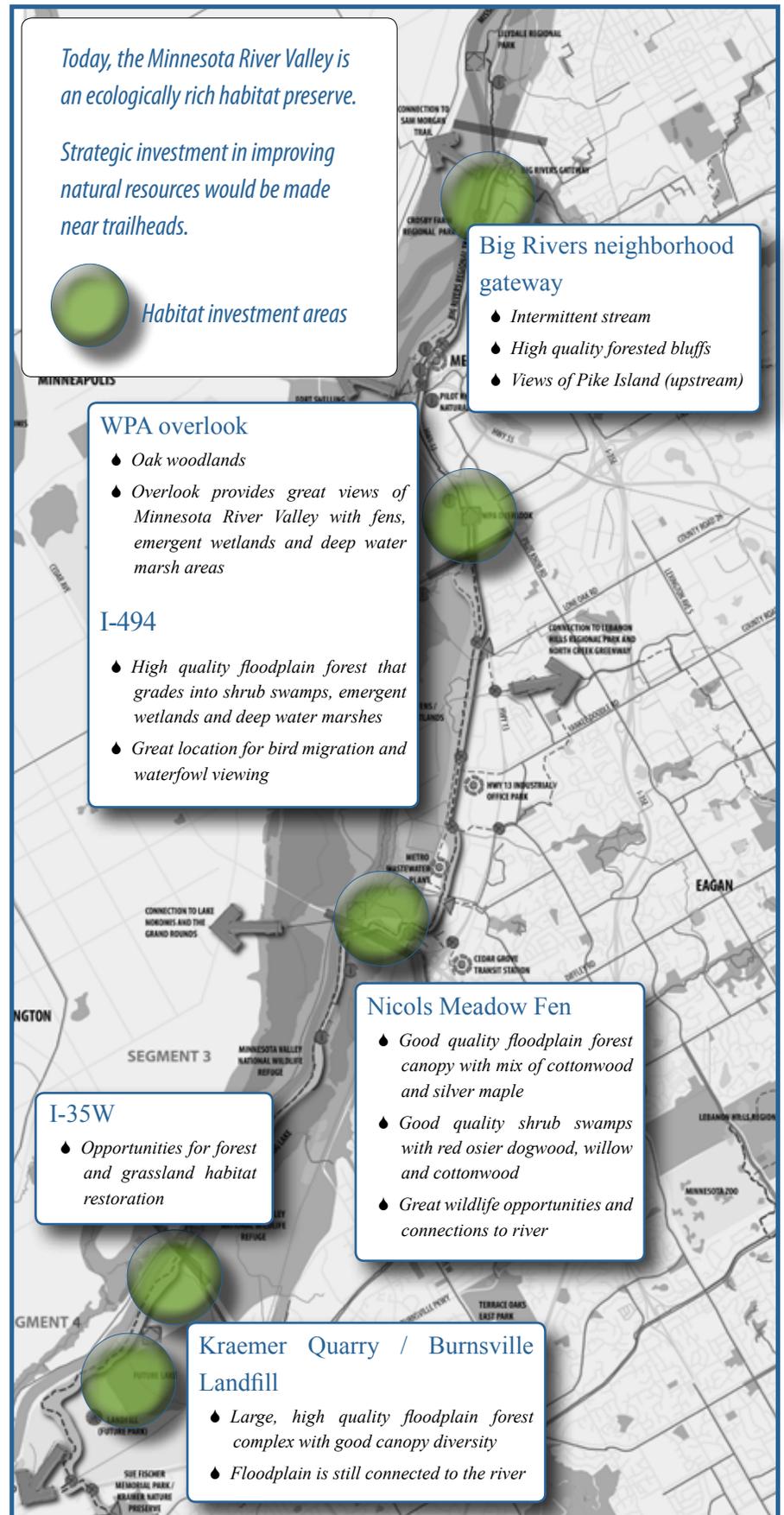
Site specific actions

Big Rivers Regional Trail gateway

Existing conditions: The intermittent stream is very close to the adjacent parking lot and receives high concentrations of runoff. It is feeling the effects of the toxic substances. Large amounts of young and fruiting buckthorn exist in the area. There are high-quality forested bluffs surrounding the site.

Recommendations: The intermittent stream adjacent the parking lot could be managed to better address impacts of urban hydrology. A planted buffer should be added or the parking lot and road runoff should be diverted to a rain garden in another location. There should be a plan for invasive species removal and prevention of further spread on the site.

Figure 48. Habitat investment areas



WPA overlook site



Works Progress Administration overlook

Existing conditions: The site is surrounded by oak woodlands with large amounts of buckthorn regrowth from previous control attempts. Some brush and tree clearing has been done for viewing opportunities but could be better managed. High quality floodplain forests that grade into shrub swamps, emergent wetlands and deep-water marshes with some isolated buckthorn (which are reaching fruiting size) and Russian olive are present.

Recommendations: Buckthorn in oak woodlands and marshes need continuous management to prevent revegetation. Management of swamps and wetlands is crucial now for buckthorn and large amounts of burdock.

Nicols Meadow Fen

Existing conditions: Very nice quality floodplain forest canopy with mix of cottonwood and silver maple, but understory being invaded by buckthorn — low and manageable numbers if restoration undertaken soon; large amounts of second growth to the east that should be managed to ensure quality canopy development. Good quality shrub swamps exist in the area with red-osier dogwood, willow and cottonwood. Reed canary grass is prevalent and beyond the level where eradication would be possible.

Recommendations: Begin restoring fen soon to stop buckthorn infestation. Remove larger amounts of buckthorn to the east of fen. Removal or management of second growth boxelder is needed. Manage reed canary grass so as not to spread further.

I-35W

Existing conditions: The site is second-growth forest and turf grass — restored former landfill and industrial site.

Recommendations: Native plant community should be restored to combination of floodplain forest and native grassland.

Kraemer Quarry / Burnsville landfill

Existing conditions: Large floodplain forest complex with good canopy diversity — high quality area with a few small areas of buckthorn. A restored wetland is progressing well. The floodplain is still connected to the river and floods regularly.

Recommendations: Buckthorn needs management to prevent spread. Periodically manage restored wetland area. Monitoring of forest regeneration will be needed in the floodplain.



SURFACE AND GROUND WATER MANAGEMENT/PROTECTION

The four trout streams require protection from thermal impacts and changes in hydrology due to stormwater runoff; this runoff can also lead to increased sedimentation and streambank instability. Design approaches are further addressed below.

Wetland systems also need to be protected from inputs of untreated runoff to prevent sedimentation, eutrophication and changes to the natural water level fluctuations.

Fens need the same protection as the other wetland systems, but also need protection on the larger landscape scale to prevent disruption of groundwater flows that maintain these rare systems.

Stormwater management options at trailheads

Trailhead parking lots typically are small; 10 to 20 stall lots situated within green space. This means that stormwater can be directed to drain off the paved surface onto surrounding ground where it can infiltrate. The best place to manage stormwater (regardless of where one is within the corridor) is at the point it runs off a hard surface; i.e. near every street, driveway and parking lot.

Water is a valuable resource, so it should be used to water plants rather than run off in pipes to a natural water body where it causes problems. By directing stormwater onto the ground rather than into a pipe, the following valuable functions are provided:

- ▶ Filtration of pollutants such as phosphorus, grease and oil through plants and soil that mitigate their effects.
- ▶ Protect downstream water bodies by preventing the influx of large amounts of water. It is best to have water slowly reach a stream or lake underground via subsurface flow.
- ▶ Protect natural water bodies by capturing pollutants at their source.
- ▶ Cool stormwater before reaching trout streams.
- ▶ Recharge groundwater and eventually aquifers.
- ▶ Water trees and other plants at the source allowing for vigorous growth and shaded parking lots.

Opportunities for stormwater management

Many practices are available to manage stormwater at trailheads. Some make more sense than others and allow “more bang for the buck.”

Practical stormwater management practices include:

- ▶ Creating shallow depressions (raingardens) alongside parking lots and grade the parking lot to tip in that direction.
- ▶ Creating planted depressed parking lot islands to capture stormwater.



It is best to treat stormwater at its source (alongside hard surfaces).



Depressed parking lot islands capture stormwater and water trees that eventually will shade the lot.



- ▶ For small parking lots surrounded by green space simply running the water onto the surrounding grass (ideally prairie grass).
- ▶ Around parking lots, planting trees to capture and evaporate rainwater on their leaves and create pores in the soil with their roots to allow water to soak in. Trees also shade pavement to keep it cooler in the summer.
- ▶ Planting prairie plants around parking lots — they function much like trees (minus the shading). They are especially useful on clay soils, where they drive roots deep and facilitate stormwater infiltration.

Stream restoration considerations

Stream restoration and stabilization should be designed by multidisciplinary teams that include expertise in engineering, hydrology, aquatic and restoration ecology, geomorphology, soil science and policy/permitting.

Each stream project design should follow these guidelines:

- ▶ Construct the channel to accommodate current and future processes
- ▶ Maintain bed load movement
- ▶ Restore pools and riffles to the stream
- ▶ Reduce stresses on the banks
- ▶ Provide for floodplain connection
- ▶ Reduce flooding
- ▶ Improve water quality

All stream restoration/stabilization should have definitive end points that consider:

- ▶ Where there is horizontal and vertical control.
- ▶ Where the forces of the stream are no longer unstable.
- ▶ Where one can successfully design a robust solution to end on (like a riffle).

Ensuring these guidelines are followed — especially in point or localized segment fixes — will ensure the project does not unravel from upstream or downstream.



Flooding in the spring (left) and fall (right) of 2010 along Minnesota River looking north.



CULTURAL RESOURCES

The Minnesota River Regional Greenway consists of topographically prominent landforms overlooking the Minnesota River and associated aquatic habitat. Numerous archaeological sites have been documented within the greenway, demonstrating pre-European contact, contact and post-contact occupation of the land. These findings indicate that regardless of where development is planned, it likely will encounter areas that possess a high potential for containing additional archaeological resources, including earthworks and burial mounds. A majority of the greenway corridor has not been surveyed and there may be archaeological sites and historic structures in the corridor that have not been identified. Therefore, it is recommended that management of cultural resources in the Minnesota River Greenway concentrate on the following recommendations.

Archaeology

Development should make every effort to avoid known archaeological sites; avoidance of burial mounds and earthworks is required by law. Due to the high occurrence within the greenway corridor of known precontact burial mounds and earthworks, as well as other archaeological sites, it is recommended that a Phase I archaeological survey of previously unsurveyed areas that will be affected by development be conducted prior to design work. If the survey is conducted in advance of facility and trail design, designs can be informed by the survey and impacts to vulnerable cultural resources can be avoided.

The presence of burial mounds in a recreational area puts these significant and sensitive cultural resources at risk. Subdivision 3 of the Minnesota Private Cemeteries Act affords the Minnesota Indian Affairs Council the choice to notify the public of the mounds for protective purposes. Signs may list the activities prohibited by Subdivision 2 and the penalty for violation of that law. This posting is at the discretion of MIAC. It is recommended that Dakota County initiate a relationship with MIAC in advance of any design for the greenway to ensure a fruitful working relationship through the development process.

Historic structures

There are 10 sites on the National Register of Historic Places and three that are eligible within the Minnesota River Greenway. A majority of the greenway has not been surveyed, however, and there is moderate potential for the area to contain historic structures that have not been identified.

If Dakota County or its partners receive state funding or permitting for greenway development, the Minnesota Historic Sites Act would require that properties on the State Register of Historic Places or the NRHP be considered before doing anything that might impact historic properties. If Dakota County or its partners receive federal funding or permitting for greenway development, they must comply with Section 106 of the National Historic Preservation Act, which requires consideration of all historic properties eligible or potentially eligible for the NRHP. A Phase I architectural survey of areas that would be affected by greenway development is recommended to ensure compliance with state and federal regulations and to follow best practices. A Phase I survey would determine whether any unsurveyed properties within or adjacent the greenway are potentially eligible for inclusion on the NRHP. A Phase I architectural history survey also would determine whether previously inventoried architectural history properties listed as “undetermined” are potentially eligible for the NRHP.

Historic properties within or adjacent the greenway could be visually impacted by lighting, benches or other facilities. If greenway development is planned near historic properties, it is suggested that any facilities remain outside the historic boundaries of those properties. If designs for greenway development may visually impact NRHP eligible properties, the design will need to meet the Secretary of the Interior’s standards if there is any federal involvement.



Implementation & management

4

OVERVIEW

This master plan is a long-range vision for recreation, transportation, water quality and habitat improvements for the Minnesota River Greenway. Accomplishing this vision depends on multijurisdictional collaboration. Without continued coordination between the greenway communities, the

MnDNR, the Lower Minnesota River Valley Watershed District, the U.S. Fish and Wildlife Service and private landowners it is unlikely the greenway could be realized as envisioned. Working collaboratively will enable Dakota County, cities and other agencies to leverage resources to assemble, operate and maintain the greenway.

While the 30-foot regional trail corridor will be the jurisdictional and operational responsibility of Dakota County, the larger greenway corridor will be governed in many ways depending on the situation. Similarly, responsibilities for land acquisition, construction, stewardship, operations and maintenance will depend on the particularities of each segment.

The Minnesota River Greenway is part of the planned Minnesota Valley State Trail, which will extend from St. Paul to Le Sueur. If the greenway trail is designated as a state trail, MnDNR likely would take the lead on implementation, operations and maintenance of the Minnesota River Greenway.

Cedar Avenue Bridge



This chapter outlines approaches for greenway implementation, including:

- ▶ Phasing and priorities
- ▶ Land protection and stewardship
- ▶ Operations
- ▶ Funding
- ▶ Capital and operational budgets

PHASING AND PRIORITIES

The Minnesota River Greenway will be implemented in phases. Greenway segments have been prioritized into first priority projects, second priority projects and long-term projects (Figure 55, Table 54). It is anticipated that first priority projects will be built in advanced of second priority projects but the master plan remains flexible so that any project can be implemented as partnership or funding opportunities arise.

- ▶ First priority projects are those that are needed to create a continuous, functional greenway experience. It is intended that recreation, nonmotorized transportation, water quality and natural resource elements be integrated into the greenway at the time of initial construction.
- ▶ Second priority projects will enhance the greenway experience. These are things such as grade separated crossings and trailhead development.
- ▶ Long term projects are in areas where the greenway will be built along with future development or redevelopment and continuous lighting.

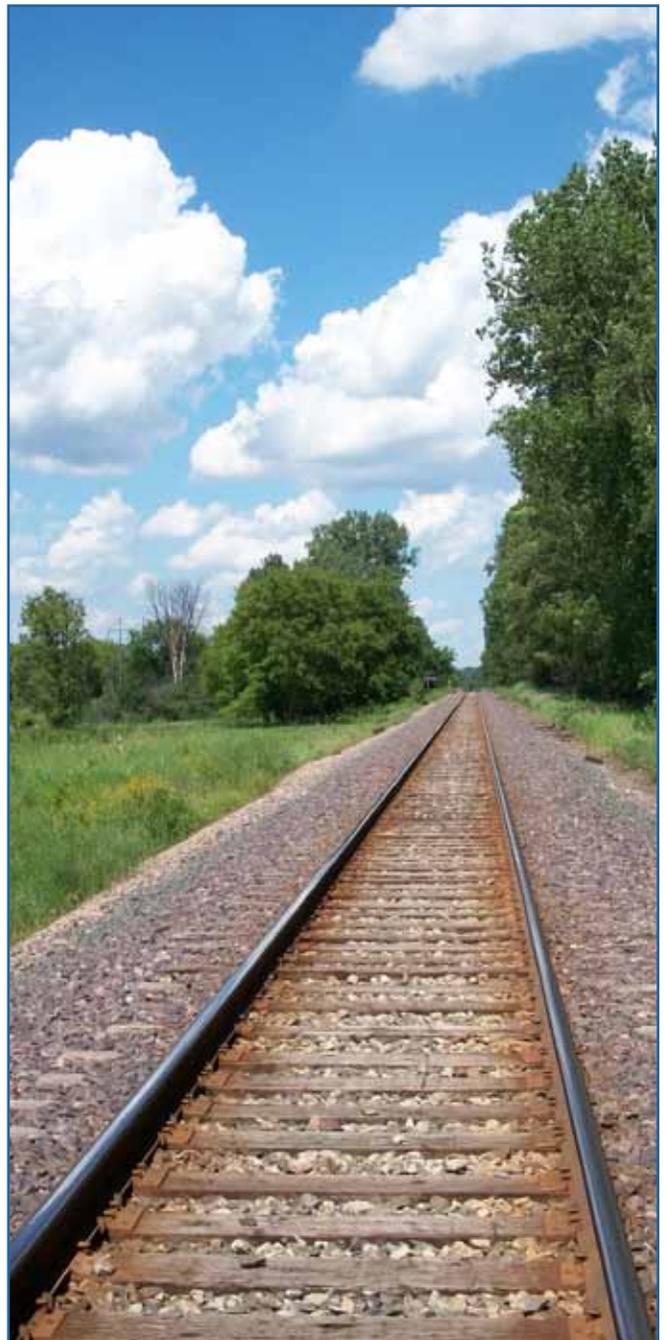
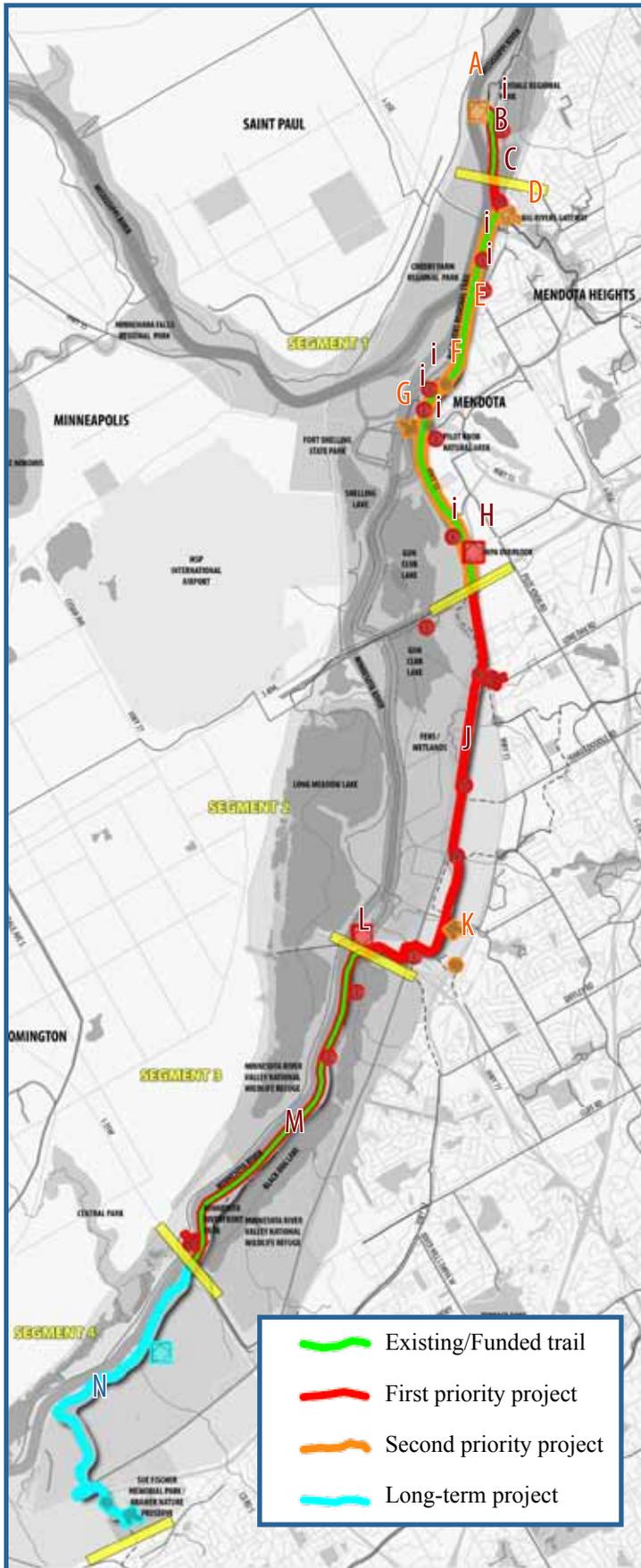
In cases where gaps in the regional trail exist and alternate trail connections can be made on existing trails, interim routes will be designated until the full trail can be constructed. These trails will have temporary wayfinding signage and enhanced road crossings.

Table 54. Minnesota River Greenway Priority Projects

PROJECT	PRIORITY	POTENTIAL TRIGGERS/PARTNERS	
<i>Segment 1: Lilydale Regional Park to I-494</i>			
A	Lilydale trailhead	2nd	in conjunction with Lilydale Park development
B	Lilydale gap to Big Rivers Regional Trail	1st	
C	Improved railroad bridge to accommodate trail	1st	
D	Big Rivers gateway	2nd	
E	Big Rivers Regional Trail improvements	2nd	
F	Tunnel at Sibley Highway north of downtown Mendota	2nd	assumes implementation with Mn/DOT Hwy 13 project
G	Downtown Mendota gateway	2nd	assumes implementation with Mn/DOT Hwy 13 project
H	WPA trailhead and overlook improvements	1st	
I	Wayfinding and interpretation	1st	
<i>Segment 2: I-494 to Cedar Ave/TH 77</i>			
J	Trail from I-494 to Cedar Avenue	1st	
K	Eagan gateway	2nd	in conjunction with local trail completion
L	Cedar Avenue trailhead and boat launch	1st	collaborate with DNR
<i>Segment 3: TH77 to I-35W</i>			
M	Black Dog Greenway	1st	
<i>Segment 4: I-35W to Scott County</i>			
N	Greenway from I-35W to Scott County	long-term	to be completed with redevelopment



Figure 55. Minnesota River Greenway priority projects



Near Nicols Fen

Table 55. Land protection costs

SEGMENT	PRIVATE LAND (LINEAR FEET)	COST
1	1,000	\$ 90,000
2	1,700	\$ 153,000
3	-	-
4	17,800	\$ 1,602,000



LAND PROTECTION AND STEWARDSHIP

Dakota County’s greenway concept expands the concept of a trail corridor to incorporate recreation, transportation, ecological and water quality components in a 100- to 300-foot corridor. Because securing the entire width of the corridor is not feasible, a dual approach to securing greenway lands is recommended.

Land protection — protecting land essential to make the greenway usable. For the Minnesota River Greenway, this means securing land needed for the trail corridor and trailheads.

Land stewardship — the care of native landscapes and habitat within the greenway.

Land protection

It is essential that Dakota County secure land for the 30-foot trail alignment and trailheads. Parcels within the Minnesota River corridor needing protection are shown in Figure 56. Three categories illustrate land owned by Dakota County, land owned by other public entities and privately held land. For land owned by other public agencies, Dakota County will permanently protect the trail corridor and trailheads with easement or joint powers agreements. For private land the County will acquire the trail corridor for public use. Table 56 summarizes approximate acreage needed. Table 57 identifies likely ownership.

Land protection strategies include: park dedication, direct purchase with resale of land not required for the trail, permanent easements, land donation, bargain sale, life estate and negotiations with cities and developers.

Table 56. Current land ownership of 30-foot wide regional trail easement

SEGMENT	PUBLIC	PRIVATE	TOTAL
1	13.7 acres	0.7 acres	14.4 acres
2	15.0 acres	1.2 acres	16.2 acres
3	1.5 acres	-	1.5 acres
4	1.0 acres	12.3 acres	13.3 acres
TOTAL	31.2 acres	14.2 acres	45.4 acres

Figure 56. Minnesota River Greenway property ownership



Land stewardship

The natural resource objective for the greenway system is to maintain or create a healthy context within which nature can thrive. The first stewardship priority is restoring continuous habitat within the greenway corridors followed by habitat restoration and protection of the most sensitive lands, including uplands that link greenways to the broader landscapes. Generally, Dakota County will not be the lead agency in stewardship activities outside the 30-foot regional trail corridor, but will work as a partner with local jurisdictions, agencies and private landowners with funding and expertise. Table 58 identifies likely stewardship partners.

MANAGEMENT AND OPERATIONS

Like other aspects of the greenway, management and operations will be a collaboration between the County, cities and other partners. Responsibilities will vary by greenway segment. While this master plan defines general responsibilities for each greenway segment, formal joint powers agreements between Dakota County and collaborating agencies will need to be needed to outline specific agency responsibilities. These agreements will outline who has control of the trail right-of-way as well as who will operate and maintain the trail and how they will do it. Table 58 provides a framework for anticipated agency roles in ownership, design and engineering, construction, restoration, operations and maintenance.

Management

The Dakota County Parks and Open Space Department is charged with operation of the County’s parks system and will be the lead agency for coordinating greenway and management operations. The Dakota County Board of Commissioners establishes policies and goals for the park system and through an annual budget provides capital and operating funds for the

Table 57: Land protection and stewardship tools

TOOL	DAKOTA COUNTY		OTHER PUBLIC LAND		CURRENT PRIVATE LANDS	
	30' Regional Trail Easement or Trailhead	100'-300' Greenway	30' Regional Trail Corridor or Trailhead	100'-300' Greenway and Neighborhood Gateways	30' Regional Trail Easement or Trailhead	100'-300' Greenway and Neighborhood Gateways
County Easement			✓	✓	✓	✓
County Fee Title			✓		✓	
Other Public Agency Acquisition						✓
Easement or Fee Title						✓
Use Agreement	✓	✓	✓	✓		
Stewardship Partnerships				✓		✓



Table 58. Greenway implementation agency roles

COMPONENT	LAND PROTECTION	DESIGN/ ENGINEERING	CONSTRUCTION/ RESTORATION	OPERATIONS/ MAINTENANCE
Segment 1: Lilydale Regional Park to I-494				
<i>Regional trail and trailheads (30-foot corridor within greenway)</i>				
Lilydale Regional Park trailhead	City of St. Paul	City of St. Paul with input from Dakota County	City of St. Paul	City of St. Paul
Lilydale Regional Park – Big Rivers Regional Trail connection	Dakota County	Dakota County	Dakota County	Dakota County
Big Rivers Regional Trail and gateway	Existing use agreement between Dakota County and Mn/DOT	Dakota County	Dakota County	Dakota County
Downtown Mendota gateway	Use agreement with Mn/DOT, city of Mendota	Partnership: Mn/DOT, Mendota, Dakota County	Mn/DOT	Partnership Mn/DOT, MnDNR, Dakota County
WPA trailhead and overlook	Existing use agreement with Mn/DOT	Dakota County with Mn/DOT, MnDNR, Fort Snelling	Dakota County	Partnership Mn/DOT, MnDNR, Dakota County
<i>Greenway Corridor (100 to 300 feet)</i>				
Greater greenway corridor	MnDNR, private land, Mn/DOT, cities of Mendota and Lilydale	Land owner	Land owner	Land owner
Segment 2: I-494 to Cedar Ave/TH 77				
<i>Regional trail and trailheads (30-foot corridor within greenway)</i>				
Trail from I-494 to Cedar Avenue	Dakota County; use agreement with MnDNR/MCES	Partnership of Dakota County, MnDNR	Partnership of Dakota County, MnDNR, Metropolitan Council	Dakota County
Cedar Avenue boat launch and trailhead	Dakota County; use agreement with MnDNR	Partnership of Dakota County, MnDNR	Partnership of Dakota County, MnDNR	Partnership of Dakota County, MnDNR
<i>Greenway corridor (100 to 300 feet)</i>				
Greater greenway corridor	MnDNR, city of Eagan, private land	MnDNR	MnDNR	MnDNR
Segment 3: Cedar Ave/TH 77 to I-35W				
<i>Regional trail and trailheads (30-foot corridor within greenway)</i>				
Black Dog trail corridor	Use agreement with city of Burnsville, U.S. Fish and Wildlife Service, Xcel Energy	City of Burnsville	City of Burnsville	Partnership of Dakota County and U.S. Fish and Wildlife Service
<i>Greenway corridor (100 to 300 feet)</i>				
Greater greenway corridor	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service	U.S. Fish and Wildlife Service, MnDNR
Segment 4: I-35W to Sue Fischer Memorial Park				
<i>Regional trail and trailheads (30-foot corridor within larger greenway)</i>				
Trail Corridor and future trailhead	Use agreement with city of Burnsville	City of Burnsville	City of Burnsville	Partnership of Dakota County, city of Burnsville
<i>Greenway Corridor (100 to 300 feet)</i>				
Greater greenway corridor	Private landowners and city of Burnsville	Private landowners and city of Burnsville	Private landowners and city of Burnsville	Private landowners, city of Burnsville, MnDNR



department. The Park and Recreation Advisory Committee, appointed by the Board of Commissioners, advises the County on park and recreation trail issues.

If the Minnesota River Greenway is designated part of the Minnesota Valley State trail, the MnDNR likely would take over operations and management.

General operations

Dakota County Parks and Open Space Department will be responsible for the operation of the 30-foot regional trail corridor. Where there are opportunities for operations partnerships, Dakota County will enter a joint powers agreement with partner agencies (potential partner agencies are identified in Table 58. The Parks and Open Space Department employs a staff of permanent employees and seasonal employees adequate to maintain the system. Volunteers assist with outdoor education programs, patrol, park clean-ups and special events. Contractual agreements also are in place with outside agencies for some maintenance and natural resource work.

Dakota County recognizes that as facilities expand, it will need to increase staffing. Based on operations and maintenance staffing for current Dakota County regional trails, it is anticipated that when the regional trail within the Minnesota River Greenway is complete, an additional 0.5 full time employee park keeper (1,000 hours of labor) and 0.5 to 1 FTE seasonal employee (1,000 to 2,000 hours of labor) will be needed.

Operating hours

The regional trail through the Minnesota River Greenway will be open 24 hours for transportation purposes. Operating hours for the wider Minnesota River Greenway, including trailheads and neighborhood gateways, likely will be sunrise to sunset. Hours may vary and change seasonally based on the type of use and presence of lighting. Dakota County will work with local jurisdictions to reconcile differences between greenway hours and hours of local parks the greenway travels through.

Table 59. Pavement management activities

YEAR	ACTIVITY
0	Original construction
3	Sealcoating
7	Crack filling, minor patching
11	Crack filling, minor patching
13	Sealcoating
16	Crack filling, minor patching
20	Total reconstruction

Maintenance

Maintenance of facilities and lands is essential to protect public investment, enhance natural resource quality and achieve the County's goals of providing recreational users clean, safe, enjoyable year-round experiences. The Dakota County Parks and Open Space Department has a clearly defined maintenance program and reporting hierarchy led by the manager of park development and maintenance, who reports to the parks director.

Regular maintenance activities for the greenway will include:

- ▶ Sign maintenance
- ▶ Trash collection
- ▶ Sweeping and blowing
- ▶ Trail repair
- ▶ Bridge repair
- ▶ Trailhead facility repair and maintenance
- ▶ Mowing
- ▶ Tree trimming
- ▶ Natural resource management
- ▶ Winter trail clearing



Pavement management

Pavement deteriorates as it ages. Regular pavement maintenance can prolong the life-span of the greenway trail in a cost effective manner. At left is an outline of recommended activities.

Ordinances

Public use and enjoyment of the County park system is controlled by Ordinance 107, Park Ordinance, which was last revised June 3, 1997. The ordinance incorporates pertinent Minnesota statutes and addresses the following issues:

- ▶ Regulation of public use
- ▶ Regulation of general conduct
- ▶ Regulations pertaining to general parkland operation
- ▶ Protection of property, structures and natural resources
- ▶ Regulation of recreational activity
- ▶ Regulation of motorized vehicles, traffic and parking

Enforcement and security

Visitors are informed of park and trail rules and regulations through strategically located kiosks and signs that address specific information about hours, trails, permitted and prohibited activities, fees and directions. Dakota County Parks, Lakes and Trails officers will patrol the park in motor vehicles, on bicycles and on foot. Officers will also educate visitors and enforce ordinances. Local law enforcement and public safety agencies will be responsible for emergency and criminal complaints within the greenway.

Public awareness

Dakota County's Parks and Open Space Department will continue working with the County's Dakota County Communications Department to promote awareness and use of the County's parks and greenway system. Many tools are available to promote awareness of Dakota County parks and greenways including, but not limited to, websites, direct mail, press releases, brochures, on-site promotion, monument signage along roads, wayfinding within greenways and parks and paid advertising. Dakota County also collaborates with cities, businesses, the Metropolitan Regional Parks System and others to promote its facilities, programs and services and educate the public about its resources.

Conflicts

The surrounding land uses and the greenway are generally compatible and no unusual conflicts affect the viability of master plan recommendations. Minor conflicts will arise from private encroachment or neighboring residents' sensitivity to greenway, recreation or maintenance uses. Dakota County will work with individual landowners to resolve these issues case by case.

Public services

No significant new public services will be needed to accommodate the greenway. Proposed trailheads and neighborhood gateways are served by the existing road network. In the event that city utilities are not easily accessible at gateway and trailhead locations, options such as solar-powered lighting, self-composting toilets or wells will be explored. Stormwater will be treated on site. As greenways are built, accommodations for installing continuous trail lighting later will be considered.



FUNDING

Funding will be a collaboration among the County, cities, U.S. Fish and Wildlife Service and the MnDNR, with an emphasis on seeking outside funding such as through federal transportation enhancements grants. Cost share roles will be determined by the strengths of each agency and circumstances of each project. In-kind contributions of land, easement, design, engineering, construction and maintenance and operations are encouraged and will be outlined in individual joint powers agreements between agencies.

It is anticipated that most future capital projects will be well positioned to secure regional, state and federal funds for recreation, transportation, water and habitat and that these sources will account for a majority of capital construction costs. In many cases, but not all, Dakota County, as the regional agency, will be in the best position to pursue outside funding. Examples of outside funding sources include:

- ▶ National Park Service Rivers, Trails and Conservation Assistance Program
- ▶ Minnesota Department of Transportation
- ▶ Minnesota Department of Natural Resources
- ▶ Minnesota Pollution Control Agency
- ▶ The Environment and Natural Resources Trust Fund
- ▶ Clean Water, Land and Legacy Amendment funds
- ▶ Watershed management organizations
- ▶ Foundations and nonprofits
- ▶ Statewide Health Improvement Program or similar programs

Funding for operating and maintaining the 30-foot regional trail easement and trailheads primarily will be Dakota County's responsibility. Annual operating costs are funded through the County's general fund and from regional park allocations from the Metropolitan Council. In situations where there are efficiencies in local jurisdictions performing maintenance and operations, Dakota County will enter a joint powers agreement outlining responsibilities and cost sharing.

CAPITAL AND OPERATIONAL BUDGETS

Table 55 estimates land protection costs. Because land protection strategies might include direct purchase with resale of excess land, permanent easements, land donation, bargain sale, life estate and negotiations with cities and developers, it is very difficult to project total acquisition costs. Estimated costs assume land protection of a 30-foot trail corridor on land that is currently privately owned with an average cost of \$90 per lineal foot.

Table 62 includes capital investments, the priority of the investment and project partners. The table identifies the full construction costs. It is anticipated that funding will be a collaboration between the County and partner agencies. In addition, if the greenway is designated as part of the Minnesota Valley State Trail, MnDNR likely would lead construction.

Table 64 identifies annual maintenance and operations costs for the 30-foot trail corridor including gateways, trailheads and grade separated crossings for each greenway segment. It includes yearly amortization of costs for major capital maintenance or full facility replacement approximately every 20 years.

Table 65 identifies natural resource projects and costs in the greenway. It is assumed that all projects will be led by partner organizations and the scope and partner roles will vary.



Table 62. Minnesota River Greenway capital development cost estimate

ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL			PROJECT PARTNER
					1ST PRIORITY	2ND PRIORITY	LONG-TERM	
SEGMENT 1: Lilydale Regional Park to I-494								
A	Lilydale Trailhead				by City of Saint Paul			City of Saint Paul
	<i>A Subtotal</i>				\$ -	\$ -	\$ -	
B	Lilydale to Big Rivers Regional Greenway							
	NEW TRAIL (includes minor fencing, retaining, and basic water management)	800	Ln Ft	\$ 60	\$ 48,000			
	Signage/Wayfinding (assumes 4 wayfinding - interpretive per mile)	800	Ln Ft	\$ 2	\$ 1,600			
	Landscaping/Habitat Management (assumes 200 trees per mile and 12.5 acres prairie per mile)	800	Ln Ft	\$ 10	\$ 8,000			
	Site Furnishings (assumes one bumpout with benches and interpretation per mile)	800	Ln Ft	\$ 4	\$ 3,200			
	At-grade crossing of Lilydale Road	1	Lump Sum		\$ 20,000			
	<i>B Subtotal</i>				\$ 80,800	\$ -	\$ -	
C	Enhanced RR bridge at Lilydale Road							
	<i>C Subtotal</i>				\$ 50,000	\$ -	\$ -	
D	Big Rivers Gateway							
	Gateway							
	assumes 2 benches, 1 bikerack, 1 trailhead/gateway sign with interpretation, 2 waste receptacles, 1 water fountain and 1 pedestrian light		Lump Sum			\$ 35,000		
	Special Gateway Enhancements							
	Bridge over creek (assumes 10 ft wide)		Lump sum			\$ 25,000		
	Picnic Table	4	Each	\$ 2,000		\$ 8,000		
	Shelter Restroom with attached Picnic Shelter	1	Bldg	\$ 300,000		\$ 300,000		
	<i>D Subtotal</i>				\$ -	\$ 368,000	\$ -	
E	Big Rivers Regional Trail Enhancements							
	Signage/Wayfinding (assumes 4 wayfinding - interpretive per mile)	20,950	Ln Ft	\$ 2		\$ 41,900		
	Landscaping/Habitat Management (assumes 200 trees per mile and 12.5 acres prairie per mile)	20,950	Ln Ft	\$ 10		\$ 209,500		
	Site Furnishings (assumes one bumpout with benches and interpretation per mile)	20,950	Ln Ft	\$ 4		\$ 83,800		
	<i>E Subtotal</i>				\$ -	\$ 335,200	\$ -	
F	Underpass at DT Mendota							MNDOT
	<i>F Subtotal</i>				\$ -	\$ 325,000	\$ -	
G	Downtown Mendota Gateway							
	Gateway							MNDOT
	interpretation, 2 waste receptacles, 1 water fountain and 1 pedestrian light		Lump sum			\$ 35,000		
	Special Gateway Enhancements							MNDOT /MnDNR /City of Mendota
	Loop Trail - around Stormwater Pond - gravel	4,200	Ln Ft	\$ 30		\$ 126,000		
	Loop Trail - Historic Mendota	2,600	Ln Ft	\$ 30		\$ 78,000		
	Overlooks along bike trail (includes pavement, railing, walls, seating)	2	Each	\$ 15,000		\$ 30,000		
	Parking	20	Stall	\$ 1,500		\$ 30,000		
	Picnic Table	4	Each	\$ 2,000		\$ 8,000		
	Shelter Restroom	1	Bldg	\$ 350,000		\$ 350,000		
	Small Picnic Shelter with Concrete Slab	1	Each	\$ 35,000		\$ 35,000		
	Wayfinding (assumes 1 trailhead/gateway sign + 4 directional posts)		Lump sum			\$ -		
	<i>G Subtotal</i>				\$ -	\$ 692,000	\$ -	
H	WPA Trailhead and Overlook Enhancements							MNDOT/MNDNR
	assumes 2 benches, 2 bike racks, 4 picnic tables, 1 shelter restroom with attached picnic shelter, 1 vehicle oriented landmark sign, 2 waste receptacles, 1 water fountain		Lump sum		\$ 500,000			
	<i>H Subtotal</i>				\$ 500,000	\$ -	\$ -	
	<i>PRIORITY SUBTOTAL</i>				\$ 630,800	\$ 1,720,200	\$ -	
	SEGMENT 1 TOTAL				\$	2,351,000		



ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL			PROJECT PARTNER
					1ST PRIORITY	2ND PRIORITY	LONG-TERM	
SEGMENT 2: I-494 to Cedar Ave/TH 77								
J	Greenway from I-494 to Cedar Avenue							MNDNR
	NEW TRAIL (includes minor fencing, retaining, and basic water management)	23,300	Ln Ft	\$ 60	\$ 1,398,000			
	Signage/Wayfinding (assumes 4 wayfinding - interpretive per mile)	23,300	Ln Ft	\$ 2	\$ 46,600			
	Landscaping/Habitat Management (assumes 200 trees per mile and 12.5 acres prairie per mile)	23,300	Ln Ft	\$ 10	\$ 233,000			
	Site Furnishings (assumes one bumpout with benches and interpretation per mile)	23,300	Ln Ft	\$ 4	\$ 93,200			
	Pedestrian bridge over rail			Lump Sum	\$	200,000		
	Underpass			Lump Sum	\$	800,000		
	Gateway at Lone Oak Road							
	assumes 2 benches, 1 bike rack, 1 trailhead/gateway sign with interpretation, 2 waste receptacles, 1 pedestrian light and 1 water fountain			Lump sum	\$	35,000		
	Quarry Area							MNDNR
	Loop Trail - around Quarry Lake - gravel	3,700	Ln Ft	\$ 20	\$ 74,000			
	Boardwalk	100	Ln Ft	\$ 250	\$ 25,000			
	Overlooks along Lake Trail (includes pavement, railing, walls, seating)	2	Each	\$ 15,000	\$ 30,000			
	J Subtotal				\$ 1,934,800	\$ 1,000,000	\$ -	
K	Eagan Gateway							City of Eagan
	Gateway							
	assumes 2 benches, 1 bikerack, 1 trailhead/gateway sign with interpretation, 2 waste receptacles, 1 water fountain and 1 pedestrian light			Lump sum			\$ 35,000	
	K Subtotal				\$ -		\$ 35,000	
L	Cedar Avenue Trailhead and Boat Launch							MNDNR/MNDOT
	assumes 2 benches, 2 bike racks, 4 picnic tables, 1 shelter restroom with attached picnic shelter, 1 trailhead/gateway sign, 1 vehicle oriented landmark sign, 2 waste receptacles, 1 water fountain			Lump sum		\$ 365,000		
	L Subtotal				\$ -	\$ 365,000	\$ -	
	PRIORITY SUBTOTAL				\$ 1,934,800	\$ 1,365,000	\$ 35,000	
	SEGMENT 2 TOTAL				\$ 3,134,800			
SEGMENT 3: TH77 to I-35W								
M	Black Dog Greenway							Xcel Energy/US Fish and Wildlife
	NEW TRAIL (includes minor fencing, retaining, and basic water management)	20,000	Ln Ft	\$ 60	\$ 1,200,000			
	Signage/Wayfinding (assumes 4 wayfinding - interpretive per mile)	20,000	Ln Ft	\$ 2	\$ 40,000			
	Landscaping/Habitat Management (assumes 200 trees per mile and 12.5 acres prairie per mile)	20,000	Ln Ft	\$ 10	\$ 200,000			
	Site Furnishings (assumes one bumpout with benches and interpretation per mile)	20,000	Ln Ft	\$ 4	\$ 80,000			
	Gateway at I-35W							
	assumes 2 benches, 1 bike rack, 1 trailhead/gateway sign with interpretation, 2 waste receptacles and 1 water fountain				\$ 35,000			
	M Subtotal				\$ 1,555,000	\$ -	\$ -	
	PRIORITY SUBTOTAL				\$ 1,555,000	\$ -	\$ -	
	SEGMENT 3 TOTAL				\$ 1,555,000			



ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	TOTAL			PROJECT PARTNER
					1ST PRIORITY	2ND PRIORITY	LONG-TERM	
SEGMENT 4: TH77 to I-35W								
N Greenway from I-35W to Scott County								
	NEW TRAIL (includes minor fencing, retaining, and basic water management)	19,200	Ln Ft	\$ 60			\$ 1,152,000	
	Signage/Wayfinding (assumes 4 wayfinding - interpretive per mile)	19,200	Ln Ft	\$ 2			\$ 38,400	
	Landscaping/Habitat Management (assumes 200 trees per mile and 12.5 acres prairie per mile)	19,200	Ln Ft	\$ 10			\$ 192,000	
	Site Furnishings (assumes one bumpout with benches and interpretation per mile)	19,200	Ln Ft	\$ 4			\$ 76,800	
	Underpass at Hwy 13 and Chouven Avenue						\$ 900,000	
Redevelopment Trailhead								
	assumes benches, bike rack, 25-stall parking, picnic tables, picnic shelter and restrooms, signage, waste receptacles, water fountain, lighting and landscaping		Lump sum				\$ 300,000	
Gateway (location to be determined & Sue Fischer Mem. Park)								
	assumes 2 benches, 1 bikereck, 1 trailhead/gateway sign with interpretation, 2 waste receptacles, 1 water fountain and 1 pedestrian light	2	Each	\$ 35,000			\$ 70,000	
N Subtotal					\$ -	\$ -	\$ 2,729,200	
PRIORITY SUBTOTAL					\$ -	\$ -	\$ 2,729,200	
SEGMENT 4 TOTAL					\$ 2,729,200			
GREENWAY PRIORITY SUBTOTAL					\$ 4,520,600	\$ 2,085,200	\$ 2,764,200	
Contingency @ 10%					\$ 452,060	\$ 208,520	\$ 276,420	
Design/Engineering at 18%					\$ 813,708	\$ 375,336	\$ 497,556	
GREENWAY PRIORITY TOTAL					\$ 5,786,368	\$ 2,669,056	\$ 3,538,176	
GREENWAY TOTAL					\$ 11,993,600			

Table 64. Greenway operations and maintenance cost estimate

ITEM	DESCRIPTION	QTY	UNIT	Annual Operations and Maintenance		Annual Amortized Cost for Capital Maintenance/Facility Replacement		TOTAL
				UNIT COST	SUBTOTAL	UNIT COST	SUBTOTAL	
SEGMENT 1: Lilydale Regional Park to I-494								
	Lilydale Trailhead	1	EA	City of Saint Paul		City of Saint Paul		
	WPA Overlook Trailhead	1	EA	\$ 15,000	\$ 15,000	\$ 25,000	\$ 25,000	\$ 40,000
	Enhanced Gateways at Big Rivers and Mendota	2	EA	\$ 10,000	\$ 20,000	\$ 25,000	\$ 50,000	\$ 70,000
	Trail Corridor and Gateways	5	Miles	\$ 10,000	\$ 50,000	\$ 15,000	\$ 75,000	\$ 125,000
	Grade separated Crossing - Underpass	4	EA	\$ 5,000	\$ 20,000	\$ 5,000	\$ 20,000	\$ 40,000
SEGMENT 1 TOTAL					\$ 105,000	\$ 170,000	\$ 275,000	
SEGMENT 2: I-494 to Cedar Ave/TH 77								
	Trailhead - Cedar Ave	1	EA	\$ 10,000	\$ 10,000	\$ 25,000	\$ 25,000	\$ 35,000
	Trail Corridor and Gateways	4	Miles	\$ 10,000	\$ 40,000	\$ 15,000	\$ 60,000	\$ 100,000
	Grade separated Crossing - RR Underpass	2	EA	\$ 5,000	\$ 10,000	\$ 5,000	\$ 10,000	\$ 20,000
SEGMENT 2 TOTAL					\$ 60,000	\$ 95,000	\$ 155,000	
SEGMENT 3: TH77 to I-35W								
	Trail Corridor and Gateways	3.5	Miles	\$ 10,000	\$ 35,000	\$ 15,000	\$ 52,500	\$ 87,500
SEGMENT 3 TOTAL					\$ 35,000	\$ 52,500	\$ 87,500	
SEGMENT 4: TH77 to I-35W								
N Greenway from I-35W to Scott County								
	Trailhead - Burnsville	1	EA	\$ 15,000	\$ 15,000	\$ 25,000	\$ 25,000	\$ 40,000
	Trail Corridor and Gateways	4	Miles	\$ 10,000	\$ 40,000	\$ 15,000	\$ 60,000	\$ 100,000
SEGMENT 4 TOTAL					\$ 55,000	\$ 85,000	\$ 140,000	
GREENWAY TOTAL					\$ 255,000	\$ 402,500	\$ 657,500	



Table 65. Major natural resource projects

ITEM	DESCRIPTION	QTY	UNIT	UNIT COST	CAPITAL PROJECTS		YEARLY MAINTENANCE		PARTNER OPPORTUNITIES
					TOTAL	UNIT COST	BUDGET		
SEGMENT 1: Lilydale Regional Park to I-494									
Big Rivers Regional Trail Gateway									
	Planted Buffer between parking and stream	5,000	SF	\$ 1	\$ 3,000	LS	\$ 1,000		MnDNR, Lower Minnesota Valley Watershed District, MnDOT
	Invasive species removal	2	Acre	\$ 3,200	\$ 6,400	LS	\$ 1,200		
	Rain Garden	1,000	SF	\$ 10	\$ 10,000	LS	\$ 1,000		
	Subtotal				\$ 19,400		\$ 3,200		
WPA Overlook and I-494									
	Management of buckthorn/burdock	7	Acre	\$ 3,200	\$ 22,400	LS	\$ 3,500		MnDNR, Lower Minnesota Valley Watershed District, MnDOT
	Subtotal				\$ 22,400		\$ 3,500		
SEGMENT 2: I-494 to Cedar Ave/TH 77									
Quarry Area									
	Invasive species management (buckthorn, box elder, reed canary grass)	100	Acre				\$ 300	\$ 30,000	MnDNR, Lower Minnesota Valley Watershed District
	Fen Restoration: groundwater investigation and restoration pilot study	1	LS	\$ 20,000	\$ 20,000				
	Subtotal				\$ 20,000		\$ 30,000		
Nicols Meadow Fen									
	Invasive species management (buckthorn, box elder, reed canary grass)	100	Acre				\$ 300	\$ 30,000	MnDNR, Lower Minnesota Valley Watershed District, US Fish and Wildlife Service
	Fen Restoration: groundwater investigation and restoration pilot study	1	LS	\$ 20,000	\$ 20,000				
	Subtotal				\$ 20,000		\$ 90,000		
SEGMENT 3: TH77 to I-35W									
Black Dog Greenway									
	Floodplain Forest / Native Grassland Restoration	150	Acre	\$ 650	\$ 97,500	LS	\$ 20,000		MnDNR, Lower Minnesota Valley Watershed District, US Fish and Wildlife Service, Xcel Energy
	Subtotal				\$ 97,500		\$ 20,000		
SEGMENT 4: TH77 to I-35W									
Burnsville Redevelopment Area									
	Buckthorn management	40	Acre	\$ 3,200	\$ 128,000	LS	\$ 6,000		MnDNR, Lower Minnesota Valley Watershed District, City of Burnsville
	Wetland restoration and management	35	Acre	\$ 2,600	\$ 91,000	LS	\$ 6,000		
	Floodplain forest regeneration & management	80	Acre	\$ 650	\$ 52,000	LS	\$ 6,000		
	Subtotal				\$ 271,000		\$ 18,000		
	TOTAL				\$ 450,300		\$ 164,700		



MINNESOTA RIVER GREENWAY

MASTER PLAN

2011



Appendix

Planning context



PLANNING CONTEXT

The Minnesota River Greenway will be a regional greenway that in its 17-mile stretch travels through five municipalities, skirts Fort Snelling State Park and travels through the Minnesota Valley National Wildlife Refuge. As such, there are many planning efforts that impact the Minnesota River Greenway:

Metropolitan Regional Parks System

The Metropolitan Council oversees planning and metropolitan funding across the seven-county metropolitan region for the regional parks, trails and open space. Dakota County is one of 10 implementing agencies for the Metropolitan Regional Parks System. As an implementing agency the County owns, maintains and operates regional facilities and is eligible for funding and assistance from the Metropolitan Council. As of 2011, Dakota County owns and manages seven parks and three regional trails.

Local comprehensive plans

The Minnesota River Greenway has been identified as a general search area along the Minnesota River in the 2030 comprehensive plans for the cities of Lilydale, Mendota, Mendota Heights, Eagan and Burnsville.

Intercity Trail

The Intercity Trail is a current planning effort to create a trail in Hennepin County connecting the Minnesota River to Lake Nokomis, roughly paralleling Cedar Avenue. A new or rebuilt Minnesota River / Long Meadow Lake crossing would connect the Minnesota River Greenway to the Grand Rounds.

Long Meadow Lake / Old Cedar Avenue pedestrian bridge

Efforts continue by a variety of interest groups and agencies to build a nonmotorized trail connection across Long Meadow Lake near TH 77. This trail likely will cross at or near the currently closed Old Cedar Avenue camelback bridge.

Minnesota Valley National Wildlife Refuge, Recreation Area and State Trail Comprehensive Plan, July 1984

This plan considers three areas managed concurrently: the Minnesota Valley National Wildlife Refuge, the Minnesota Valley State Trail and the Wildlife Recreation Area.

- ▶ The overall goal for these three areas is to preserve the wildlife, natural and cultural resources of the lower Minnesota River Valley from St. Paul to Le Sueur while providing natural resource recreation and education opportunities for major segments of the population.
- ▶ The Minnesota Valley State Trail is identified as a continuous trail from St. Paul to Le Sueur. In Dakota County, a trail is shown from Cedar Avenue to Scott County. Trailheads in Dakota County are suggested at Fort Snelling, Black Dog Park and Long Meadow Lake. Smaller-scale trail access is identified on the southeast side of the river at Cedar Avenue and at two locations in Burnsville southeast of Black Dog Lake.

Fort Snelling State Park Management Plan, 1997

The mission of Fort Snelling State Park is to preserve and manage diverse natural, scenic and cultural resources while providing recreation and educational opportunities. Pertinent major initiatives of the management plan include:

1. Divert stormwater away from Nicols Meadow Fen.
2. Provide public access to Fort Snelling from Dakota County.
3. Build bridges to the diverse cultural communities through programming, facilities, transportation and trail access, marketing and outreach.
4. An ecosystem-based management philosophy, which includes managing places according to the connection between human use and the needs of a diverse set of plants and animals.

Minnesota Valley National Wildlife Refuge / Black Dog Road area

Burnsville's consideration of Black Dog Road abandonment and Xcel Energy's plans to rebuild its Black Dog plant have been incorporated into the Black Dog Road Feasibility Study. Continued coordination the U.S. Fish and Wildlife Service, the city of Burnsville and Xcel Energy will be necessary.

2010 Lilydale Regional Park Master Plan

This plan guides natural resource stewardship and recreational development in Lilydale Regional Park, immediately north of the Minnesota River Greenway. Proposed improvements include a picnic area at Pickerel Lake; rerouting of the regional trail along the Mississippi River; and a new stormwater treatment area southeast of Pickerel Lake.

2007 Pilot Knob Phase II Natural Resource Management Plan

This plan guides natural resource management for the culturally and ecologically significant Pilot Knob area in Mendota Heights just south of TH 55.



Mn/DOT Highway 13 in Mendota

Mn/DOT has three projects planned for TH 13 in Lilydale, from I-35E to Mendota. In 2011 traffic signals and sidewalk connections at the 13/I-35E ramps will be installed to improve safety. A new road surface, drainage improvements, stormwater treatment improvements and a trail on the north side of the road are planned for 2012 and 2015.

Mn/DOT Highway 13 and County Road 5 interchange

This proposed project will include new interchange construction as well as related road, drainage, pavement and safety improvements. This project has potential for a grade separated crossing of State Highway 13 at this location. This project is partially funded; timing of the project is dependent on funding.

City of Burnsville Minnesota River Quadrant concept

The conceptual redevelopment plan for the Minnesota River Quadrant, currently a quarry and landfill, includes a new lake with public access and a boat launch, the conceptual regional trail alignment and a large riverfront park.



MINNESOTA RIVER GREENWAY

MASTER PLAN

2011

